E. Eng.
TN
860
O43

EDITORIAL INDEX

VOLUME 136, No. 1, through VOLUME 137, No. 7

JANUARY-DECEMBER 1953

WORLD OIL

Published Monthly except semi-monthly in February and August

By

THE GULF PUBLISHING COMPANY

Box 2608, Houston (1), Texas

Index by Authors . . . . . Pages 2 to 6

Index by Subject Matter . . . . . Pages 7 to 19

AUTHOR INDEX

A

ALCORN, C. H.
New Drilling Equipment Reflects Industry-wide Cooperation ..... Feb. 15 152

ANDERSON, KEITH
New Mexico Drilling Still Active ..... Oct. 156

ARMSTRONG, J. F.
28,000 Barrels of Brine Disposed Daily in Six Wells at Loudon ..... Jan. 164

AUSTIN, GEORGE
How You Can Combat Hydrogen Sulfide Hazards ..... Nov. 190

B

BACHMAN, WILLIAM S.
Rubber Stabilizers Are Solving Permian Problems ..... Oct. 195

BAKER, WARREN L.
Excessive Gasoline Stocks Likely ..... Jan. 44
Good Things Ahead ..... Jan. 41
Higher California Prices Needed ..... Feb. 1 37
Drilling Costs Too High ..... Feb. 1 49
Drilling Forecast Is for 46,988 New Wells ..... Feb. 15 129
General Crude Price Increase Unlikely ..... March 40
Politics Threaten World Oil Adequacy ..... April 90
Water-Flooding Like Wildcatting ..... May 75
Economic Picture Brightens ..... May 98
Costs Can Be Cut ..... June 41
Reduced Crude Stocks Desirable ..... June 64
High Supply Endangers New Prices ..... July 84
Picking on Oil Again ..... Aug. 1 57
Excessive Supply Darkens Outlook ..... Aug. 1 80
U. S. Drilling Record Forecast in 1953 ..... Aug. 15 102
Drilling Costs Slow Discovery Rate ..... Sept. 73
Contract Drilling Highly Competitive ..... Sept. 78
Gasoline Stocks Are Too High ..... Sept. 96
Cartel Suit Should Be Heard ..... Oct. 93
Output Must Be Curtailed ..... Oct. 116
Economic Position Improves ..... Nov. 82
Better Use of Statistical Data ..... Dec. 57
Economic Position Can Be Improved ..... Dec. 80

BALDWIN, FRANK N., JR.
Field Testing Can Prevent Flange Leaks ..... May 201

BALL, MAX W.
Oil Vs. Politics ..... Feb. 1 67

BARRETT, H. M. (BILL)
Aeration of Drilling Fluids . . . A Solution to Lost Circulation? ..... Sept. 145

BARROWS, GORDON H.
Private Capital on Road to Getting 'Fair Shake' Abroad ..... Aug. 15 85

BEARDEN, WILLIAM G.
New Multiple Fracturing Process ..... Jan. 159

BEDIZ, P. I.
Interpretation of Seismic Data in Locating Reefs in Alberta ..... Feb. 1 86

BELL, FRANK S.
Planning Cuts Mud Costs ..... Feb. 1 134

BERGMAN, W. E.
Filter Press Control Facilitates Lab Scheduling ..... Nov. 151

BINNING, RALPH L.
Efficiency Curbs Canadian Drilling Costs ..... Feb. 15 286

BLAIR, RALPH F.
Maintenance Means Money in Your Pocket ..... Sept. 156

BLAKE, J. W.
Industry Report—How Are Gas Turbines Doing? ..... Nov. 222-C

BLANCHET, P. H.
Accessibility Surveys Cut Costs ..... Dec. 93

BLICK, ROBERT G.
How Flanges Work and Why They Look ..... March 222-A

BLISS, JACK E.
Vacuum Method Detects Gas-Bearing Formations ..... Oct. 218

BOATMAN, JOHN A.
What Should Be Done to Protect Engines? ..... Nov. 122

BOBO, ROY A.
Aeration of Drilling Fluids . . . A Solution to Lost Circulation? ..... Sept. 145

BOYER, A. J.
How to Maintain Correct Engine Temperatures ..... March 114

BRADLEY, R. I.
How to Present Property Appraisal Data ..... Jan. 68

BRANTLY, J. E.
PAD's Foreign Program Calls for Expanded Activity ..... Feb. 15 278

BRESTON, DR. J. N.
Conditioning Engine Exhaust Gasses for Repressuring ..... Sept. 224

BROOKS, ROBERT W.
Specific Heat Data and the Natural Gas Compressor Plant ..... Nov. 222-L

BROUSSARD, W. L.
Here's How to Rig a Unitized Trap ..... April 174

BRUBECK, WILLIAM E.
What Are the Opportunities in the Illinois Basin? ..... May 111

BUCHANAN, A. C., JR.
Electronics Speeds Gas Volume Calculations ..... March 118

BUGBEE, J. M.
Lost Circulation Can Be Avoided or Minimized ..... May 150
Procedures to Be Used in Fighting Lost Circulation ..... June 132

BURGESS, GERALD
Ohio's Slim Hole Rig Cuts Exploratory Drilling Costs ..... June 107

BURGOYNE, J. H.
How to Control Storage Tank Fires ..... Feb. 1 232-A

BURKE, JOHN H.
How to Plan a Brush Control Program ..... Sept. 246-P

C

CARPENTER, DAN H.
Don't Let Corrosion Eat Up Your Profits ..... Feb. 1 172

CARPENTER, P. G.
Boron Compounds Used As Water-Flood Tracers ..... April 214

CARPENTER, PAUL G.
New Correlation Simplifies Pressure Gradient Calculation in Tubing ..... June 161

CARSON, L. C.
They're Overcoming Drilling Problems ..... Aug. 1 146

CERINI, WILLIAM F.
How to Test Quality of Injection Water ..... Aug. 1 189

CHISHOLM, FRED
How to Train Mud Engineers ..... Jan. 115

CHURCH, CLIFFORD C.
Foraminifera—An Evaluation ..... April 75

CLARK, C. W.
Guess Work Is Removed in Flood Evaluations ..... May 216

CLARK, NORMAN J.
It Pays to Know Your Petroleum
(Part 1) ..... March 148
(Part 2) ..... April 208

CLINKENBEARD, P. S.
Compressed Gas Cuts Carthage Acidizing Costs ..... Aug. 1 150

COBLENTZ, ROBERT C.
Absorption Unit Cools Air Intake ..... Oct. 304-N

COOK, W. H.
Do You Have a Problem of Direction Drilling? ..... July 129

COOPER, G. CARL
How Are Gas Turbines Doing? ..... Nov. 222-E

COREY, B. H.
Efficiency Curbs Canadian Drilling Costs ..... Feb. 15 286

CORMACK, L. J.
Here's How to Check Motor Trouble ..... Aug. 1 210-A

CORNELL, DR. DAVID
New Methods Estimates Gas Well Performance ..... Jan. 136
Permeability Determined from Production Data ..... Feb. 1 186

COZZENS, F. R.
Stop that Thief! ..... May 234

CUMMINGS, J.
Nottinghamshire County ..... Aug. 1 230

D

DAGGS, GEORGE L.
Closed Steam System on Drilling Rigs Cuts Boiler Maintenance, Fuel Needs ..... Jan. 132

DAVIDSON, H. M.
Selling Safety . . . The Goal of the AAODC ..... Sept. 168

DAVIS, MORGAN J.
The Petroleum Geologist ..... April 74

DAWSON, D. D., JR.
Bentonite-Diesel Oil Squeeze ..... Oct. 222

DE LA ROCHE, ALBERT RUSCHIL
Cuban Exploration Travels South ..... June 243

DEVLIN, ROGER V.
If 'The Bomb' Strikes . . . Tulsa Plant Is Ready ..... May 78

AUTHOR INDEX—Continued

DODS, I. W.
Transco Uses Jets to Lower Hudson Crossing 15-20 Feet....Sept. 246-A

DOUGHERTY, R. P.
How Dehydrators Fight Internal Pipe Corrosion....April 248-H

DOUGHERTY, TOM
Drilling Problems in the Williston Basin....April 148

DOUGLAS, BURKE
Here's a New Development in Corrosion Protection...June 232-B

DUDLEY, RAY L.
Excessive Gasoline Stocks Likely....Jan. 44
Will the Growth of Middle East Oil Revive International Compact Talk?....Feb. 15 80
Attending the Exposition?....March 37
General Crude Price Increase Unlikely....March 40
Our Time-Saver Catches on....April 39
Economic Picture Brightens....May 98
Reduced Crude Stocks Desirable....June 64
Why Do They Call It That?....July 61
High Supply Endangers New Prices....July 84
Excessive Supply Darkens Outlook....Aug. 1 80
Gasoline Stocks Are Too High....Sept. 96
Output Must Be Curtailed....Oct. 116
Have You Noticed It?....Nov. 59
Economic Position Improves....Nov. 82
Economic Position Can Be Improved....Dec. 80

DUNLOP, ROBERT G.
Sinews of Industry....April 52

E

EARLOUGHER, R. C.
How to Estimate Water Requirements....Sept. 214

EBELING, HAROLD O.
How Condensate Recovery Increased....Aug. 1 176

EBY, DR. J. BRIAN
Morocco—A Country on the Threshold of Greater Wealth....Feb. 1 235

ECKARD, WILLIAM E.
How to Find a Field for Underground Natural Gas Storage....April 264-B

ECKHARDT, E. A., DR.
Geophysical Activity Reaches All-Time High in 1952.April 82

EDMUNDS, F. H.
Will Saskatchewan Discover Its Own Leduc?....Dec. 270

EGAN, E. F.
Hole Diameter Influences Neutron Derived Porosity...Jan. 172

ELLISTON, H. H.
How to Design a Radical Flow Settling Basin....March 182

ENGLE, C. J.
Filter Press Control Facilitates Lab Scheduling....Nov. 151

ERDMAN, DONALD C.
Using Ultrasound to Find Internal Pipe Corrosion..Aug. 1 210-R

ERWIN, R. W. (WOODY)
New Vacuum-Type Degasser Reduces Deep Drilling Hazards....June 125

EVJEN, H. M.
Surface Electrical Method Detects Oil Directly....Feb. 1 93

F

FARMILO, A. W.
Lower Cretaceous in Alberta and Saskatchewan....Dec. 282

FARR, A. P.
Vulnerability of Drill Pipe to Corrosion Fatigue....Oct. 200

FERGUSON, LAWRENCE E.
Rig Modernization Will Improve....Sept. 158

FILSON, ROGER C.
How to Reduce Lease Operating Expenses....Feb. 1 60

FLANDERS, GEORGE S.
Inverted-Type Packer Solves Salt Water Injection Problem....Jan. 186

FORK, CHARLES H.
Applying Graphical Methods to Square Footing Designs....May 254-D
Design of Rectangular Footings....June 214-F

FRANK, A. R.
Shop-Made Rig Speeds Operations....Jan. 131

FREDHOLD, ALLAN
How to Select and Install Braking Equipment for Your Drawworks....Jan. 135

FRIES, B. E.
Radioactive Controls Pay Off....May 270-D

FRISIUS, E. N.
Oil Field Scale and Corrosion....June 191

FULLER, R. E.
New Trailer-Mounted Rig Saves Valuable Rig-Up Time....March 120

FURBER, F. D.
Fracturing Sandstones of the Illinois Basin....Aug. 1 192

G

GALLY, S. K.
Using Ultrasound to Find Internal Pipe Corrosion...Aug. 1 210-R

GIBBON, ANTHONY
Nowata Water Floods Use Modern Techniques....Feb. 1 178
Sinclair's Big-Inch Line on Stream....June 214-H
Hauling Problems....Sept. 181

GIEZENTANNER, W. L.
Vapor Phase Cooling Boosts Engine Efficiency....July 182

GIVEN, ALICE L.
Crude, Products and Gas Lines Planned in 1953....Feb. 15 238

GLOVER, ROBERT H.
Seismograph Pays Off in Kansas....Sept. 109

GREEN, B. Q.
How to Train Mud Engineers....Jan. 115

GRIMES, WAYNE H.
What Are the Possibilities in Beaver County, Oklahoma?....June 84

H

HAGAN, W. W.
Can Western Kentucky Become An Active Oil Producing Area?....March 93

HALPINE, J. H.
How Mechanical Agitators Rid Tanks of Sediment....July 220-H

HAMAKER, REX G.
Check Your Hydraulic System to Cut Your Drilling Costs....March 128

HATFIELD, J. R.
How to Pump Deep Dual Completions Alternately....Jan. 188

HECK, WILLIAM A.
Why Has the Raton Basin Been Ignored?....Oct. 180

HICHENS, EDGAR R.
Make Weather Work For You....July 220-T

HIGHTOWER, CECIL L.
You're Safer . . . On the Job!....Jan. 220-A

HOCHHAUSEN, E.
Gravity Injection Pays Dividends at Redwater....Dec. 173

HOLIK, W. V.
How Are Gas Turbines Doing?....Nov. 222-A

HOOPMAN, H. D.
Ohio's Slim Hole Rig Cuts Exploratory Drilling Costs.June 107

HORNER, VICTOR
Here Are Factors Affecting Drill Hole Conditions....July 144

HOWARD, GEORGE
New Multiple Fracturing Process....Jan. 159

HOWELL, DR. B. F., JR.
Electrical Conduction in Fluid-Saturated Rocks
(Part 1)....Feb. 1 113
(Part 2)....March 142

HUFFMAN, WALTER E.
Take a Look at Treating Oil Emulsions....Nov. 178

HULL, D. E.
Radioactive Controls Pay Off....May 270-D

HUNTER, FRANK H.
Dual Completions Pay Off in Illinois....March 163

HUNTER, VERN H.
Drilling Operations Continue The Year Round in Canada....May 160

HUSS, CARL I.
Pressure Testing Lines with Oil....Feb. 1 200-F
This Makes Pipe Cleaning Easier....May 254-A

I

IMLE, JOHN F.
Safety Starts at the Top....Nov. 95

IRWIN, DR. ARTHUR B.
New Grid System Drafter to Speed Up Exploration...Dec. 262

J

JEFFREYS, E. G.
Northwestern Florida . . . A New Oil Province?....Aug. 1 99

JOHNSON, CURTIS H.
Are We Using Our Freedom?....April 73

JOHNSON, W. R.
Current Drilling Practices in West Texas
(Part 1) ....April 141
(Part 2) ....May 180

JOHNSTON, DAVID R.
Current Drilling Practices in West Texas
(Part 1) ....April 141
(Part 2) ....May 180

JONES, DAN L.
Legislative Outlook Is Favorable to Industry....Feb. 15 88

JONES, JENKIN LLOYD
I Saw American Enterprise and Oil Helping Build a Nation....March 242

JONES, MARVIN R.
Field Testing Can Prevent Flange Leaks....May 201

JORGENSEN, ROY C.
Here's a New Development in Corrosion Protection...June 232-B

JOSEPH, JAMES
Br-r-r-rother, It's Cold Outside!....April 286

JURIN, M. N.
Can Russia Produce 600 Million Barrels of Oil Annually by 1955?....March 236

K

KASTROP, J. E.
Dual Completion Takes Two Full Size Tubing Strings ....Feb. 1 162
Artificial Lift Equipment for 21,342 Wells Is Forecast ....Feb. 15 181
Four-Way Perforating Aids Squeeze Cementing....April 222
Magnolia Makes an Unusual Completion in Wilcox...June 176
Wire Line Methods Cut Workover Costs....Aug. 1 165
Well Stimulation at North Cowden Pays....Oct. 264
Water-Flood Restores Youth to Old West Texas Lease.Oct. 251

KAVANAGH, B.
Accessibility Surveys Cut Costs....Dec. 93

KLIEWER, DON
Petroleum Prices to Remain Generally Stable....Feb. 15 68
Politics Threaten World Oil Adequacy....April 90
This Is Talara....May 281
57 Million Pounds of Explosives....June 45
Camp Life Is Fun....July 241
World Crude Reserves....Aug. 15 76

KAYSER, PAUL
Oil and Gas Stand Side by Side....Aug. 1 68

KEPLINGER, C. H.
Unitization . . . And How It Works....July 198

KLEINMAN, B. M.
Surge Protection of Motors....Feb. 1 200-A

L

LAGUKI, E. B.
New Automatic Tank Battery....April 195

LAPP, P. A.
This New Flowmeter Measures True Mass-Rate....June 215

LASKY, BERNARD H.
Surface Minerals Reveal Michigan Structures....Dec. 100

LI, Y. T.
This New Flowmeter Measures True Mass-Rate....June 215

LINBLAD, W. N.
How to Suppress Air-Borne Pulsations....Aug. 1 210-F

LINDEMAN, FRANK, JR.
What Management Expects of Engineers....March 64

LINGO, CHARLES A.
The Landowner . . . Enemy or Friend?....March 206-J

LOGAN, L. J.
Competition Is Becoming Stiffer....Feb. 1 66
Petroleum Demand Is for 1 Percent More Crude...Feb. 15 64
New Reserves in 1952 Fall Far Short of 1951 Peak..April 66
What the Company Reports Show....May 86
Offshore Development to Be Speeded Up....June 53
FPC Policies Curtail Gas Supplies....July 71
Oil to Be $44 Billion Industry This Year....Aug. 1 58
Oil Use in the U. S. Continues to Climb....Aug. 15 96
Production Is High in the Permian Basin....Oct. 129
Imports a Growing Problem for U. S....Nov. 60

LONG, W. L. (LUKE)
Running and Pulling Pipe Under Pressure....Feb. 1 111

LUBINSKI, ARTHUR
How to Cut Costs in Crooked Hole Areas
(Part 1) ....July 135
(Part 2) ....Aug. 1 136
(Part 3) ....Sept. 172

M

MADOLE, DUDLEY
The Rig with 100 Hints....May 147

MAJOR, R. O. (JACK)
Unique Filter System—Featured in Pilot Flood....Oct. 272

MANTOOTH, CLARENCE F.
Osage County, Oklahoma....June 247

MARSHALL, J. LLOYD
Australia Is Beating the Bushes for Oil....April 282

MAST, B. T.
New Developments in Compressor Equipment....Oct. 304-A

MAYHEW, E. J.
How San Juan Operators Are Solving Mud Problems.March 136

MEADE, CAPT. R. H.
Operation Alaska ....Jan. 239

MELLEN, FREDERICK F.
Mississippi's Black Warrior Basin Yields Gas Condensate ....June 77
Black Warrior Basin . . . The Geology Is Favorable..July 97

MELLIES, N. J.
Guess Work Is Removed in Flood Evaluations....May 216

MENZIE, D. E.
How to Select the Best Decline Curve....Dec. 180

MERRIMAN, DONALD R.
Buckeye System Designed for Easy Expansion....Nov. 246

MEYER, H. R.
How to Maintain Electrical Equipment....July 221

MEYERS, R. D.
Cutoff Technique Reduces Time Requirements 50%.Feb. 1 124

MIDDLETON, W. A.
New Automatic Tank Battery....April 195

MILLS, KENNETH N.
How to Select a Subsurface Pump Plunger to Fit the Job....May 224
Proper Gas Control in Pumping Wells....Dec. 188

MILSTEIN, MARK
Improved Magnetic Method Can Avoid Drilling Failures ....Jan. 87

MOORE, DR. CARL A.
Mistakes Can Be Costly in Geologic Correlations....July 109

MOORE, STANLEY C.
Vulnerability of Drill Pipe to Corrosion Fatigue....Oct. 200

MORGAN, T. D.
Boron Compounds Used as Water-Flood Tracers....April 214

MORRIS, HAROLD G.
Here's How Machines Measure Gas Volumes
(Part 1) ....March 206-A
(Part 2) ....April 264-E

MUELLER, DR. ADELHEID
How Micro-Organisms Can Aid Search for Oil....March 95

MURDOCH, J. B., JR.
How to Cut Costs in Crooked Hole Areas....Oct. 213

MYERS, BARTON A.
Tulsa Is Ready to House 25,000 Visitors to IPE....Feb. 15 295

Mc

McELVANEY, EUGENE
A Banker Looks at the Contracting Business....Nov. 140
Management Important in Securing Loans....Dec. 64

McLAUGHLIN, PHILLIP L.
Efficiency Keynotes Takeup Job....Feb. 1 232-D
Luxury and Efficiency Afloat....April 164
Bulk Mud Saves Crew Time . . . Holds Waste to a Minimum....Aug. 1 126
Well Completion Costs Rise Sharply....Sept. 84
What Are the Problems in the Delaware Basin?....Dec. 152

McMULLEN, J. J. COMDR.
How a Free-Piston Engine Works....July 220-A

N

NAEHER, W. F.
Here's How Machines Measure Gas Volumes
(Part 1) ....March 206-A
(Part 2) ....April 264-E

NEATH, W. A.
How to Estimate Water Requirements....Sept. 214

O

OLDSHUE, J. Y.
Fluid Mixture Being Used to Mix Drilling Mud.....Sept. 150

OLIVER, GORDON
Be Safe Though Small.....Jan. 140

OLSON, C. C.
Subsurface Pressures Tell Story.....Feb. 1 155

ORTLOFF, JOHN E.
Cable Handling Device Includes New Features.....April 107

P

PARKER, MARSHALL E.
Pipe Line Corrosion and Cathodic Protection—
Part 1—Soil Resistivity Surveys.....Feb. 210
Part 2—Potential Surveys .....March 222-J
Part 3—Line Currents .....April 248-F
Part 4—Current Requirement Surveys.....May 270-H
Part 5—Rectifier System for Coated Lines.....June 232-F
Part 6—Ground Bed Design and Installation.....July 220-O
Part 7—Magnesium Anodes on Coated Lines.....Aug. 210-J
Part 8—Hot Spot Protection with Magnesium Anodes .....Sept. 246-S
Part 9—Stray Current Electrolysis.....Oct. 304-T
Part 10—Interference in Cathodic Protection Systems .....Nov. 222-T
Part 11—Operation and Maintenance of Cathodic Protection Systems.....Dec. 224-S

PARSONS, E. D.
Boron Compounds Used as Water-Flood Tracers.....April 214

PAZDERNY, LEONARD C.
Pre-Running Ignition System.....Nov. 222-K

PENICK, DUDLEY C.
How to Solve Problems in Gas Measurements.....Nov. 194

PERKINS, J. A., JR.
New Production Methods Seek More Efficiency at Lower Costs .....Feb. 15 217

PLUMMER, HARRY CHAPIN
Canadian Tankers Are Still Busy.....Nov. 278

POETTMANN, FRED H.
New Correlation Simplifies Pressure Gradient Calculation in Tubing.....June 161

POHLY, RICHARD A.
New Gravity Approach Aids Reef Interpretation.....May 116

PRATT, R. B.
New Oil-Finding Method Tested.....Nov. 98

PREBBLE, F. E.
Accessibility Surveys Cut Costs.....Dec. 93

PRESCOTT, B. OSBORNE
Subsurface Problems Are Easier to Solve.....Sept. 118

PRIESMEYER, HENRY
Use of Existing Tubing Cuts Workover Costs.....June 186

PROPER, GENE
Automatic Shutdown Device Developed for Main Line Block Valves.....May 254-J

PUZIN, L. A.
New Well Logging Developments.....Dec. 134

R

RAMSEY, ROBERT P.
How a Free-Piston Engine Works.....July 220-A

RANKIN, DAN R.
What Is "NPSH"?.....Aug. 1 210-N
It's Easy to Determine NPSH.....Sept. 246-L

RASSMUSS, DR. JUAN E.
Peru Perks Up.....April 275
There's Oil in Peru's Montana.....May 288
Nature Makes it Tough.....Sept. 272

REESE, AL
Pipe Line Portrait—H. H. Anderson.....Jan. 218
Compensation Laws Under Fire.....Feb. 1 55
Pipe Line Portrait—Ralph B. McLaughlin.....April 264-A
Pipe Line Portrait—Joseph H. Russell.....May 270-J
When the Big Winds Blow.....June 48
International Fireman—M. M. Kinley.....July 63
How Much Authority Should Safety Directors Have?.Aug. 1 60
M. M. Kinley, International Fireman (Part 2).....Aug. 1 63
World Completions and Footage.....Aug. 15 61
Try Barbecues and Bonuses.....Sept. 170
They Fight Their Neighbors' Fires.....Oct. 304-E
The Air-Conditioned Roughnecks of Breton Sound....Oct. 323
Why They Don't Get Hurt on Old Rig 25.....Nov. 66
The Man Who Wasn't Blown Up.....Dec. 68
How Are Your *Press* Relations?.....Dec. 58

REISS, ROYAL W.
Dual Completion Takes Two Full Size Tubing Strings .....Feb. 1 162
Triple Completion Takes Three Tubing Strings.....Nov. 169

REYBURN, H. O.
You Can Save Money on Taxes.....Jan. 64

RHOADS, B. J. (DUSTY), JR.
Why Worry About Port Size in Gas Lift Valves?.....Nov. 187

RICE, I. M.
Gravity Injection Pays Dividends at Redwater.....Dec. 173

RICE, DR. R. B.
New Seismic Computing Method Fast and Efficient..Aug.1 93

RICHARDS, WALTER C.
How to Select Correct Sling for a Job.....Aug. 1 121

RIGGS, C. H.
Healdton Has Big Waterflood Potential.....July 190

RIZZONE, M. L.
Power Transmission on Modern Rotary Rigs
(Part 1) .....Nov. 128
(Part 2) .....Dec. 134

ROBERTS, C. C.
Simultaneous Log of Radioactivity Curves Cuts Standby Time in Half.....Jan. 122

ROBINSON, MYRON L.
You Can Analyze Gas in the Field.....Sept. 247

ROSU, G. G.
Austrian Oil a Victim of Tensions.....Jan. 242

RUSSELL, J. H., JR.
Interpretation of Dynamometer Cards.....July 175

RYAN, JOHN
Truncation-Type Traps Offer a New Horizon.....Oct. 177

S

SCHWARTZ, DR. WILHELM
How Micro-Organisms Can Aid Search for Oil.....March 95

SCOTT, FLOYD, JR.
Mud-Stuck Tubing Recovered by String-Shot Backoff Method .....April 200

SCOTTY, C. B.
Hole Diameter Influences Neutron Derived Porosity...Jan. 172

SCRUGGS, CURTIS H.
New Electronic Control System.....Sept. 246-V

SHALLENBERGER, LAWRENCE K.
What About Compressed Air?.....April 155

SHEPHERD, D. L.
Capitalization of Exploration Expenses
(Part 1) .....April 112
(Part 2) .....May 126

SHIELS, BOB
Automatic Pump Station Eliminates Looping Need..March 222-H
New Canadian Map Shows Trail's End.....Oct. 331

SKINNER, HUBERT
Electronics Speeds Gas Volume Calculations.....March 186

SPANN, ROBERT E.
Will the Growth of Middle East Oil Revive International Compact Talk?.....Feb. 15 80
Imports vs. American Control of Oil Resources.....May 84
When the Big Winds Blow.....June 48
Middle East Prices Up . . . Why?.....Aug. 1 62
World Supply and Demand.....Aug. 15 59
New Problems Arise in Iran.....Oct. 94
Watch the Middle East.....Nov. 70

SMITH, CECIL W.
Exploration Record Continues Upward Trend.....Feb. 15 93
Drilling Forecast Is For 46,988 New Wells.....Feb. 15 129
Exploratory Drilling off to a Fast Start.....March 98
Exploratory Drilling Remains Well Ahead of 1952 Pace .....April 120
Completions Up, But Drilling Falling Behind 1952 Pace.....May 102
Exploratory Drilling Continues Record-Breaking Pace for Year.....May 130
Increase in Activity Sends Exploratory Completions Up .....June 97
Upswing Continues, 1010 Tests in May.....July 116
Exploratory Drilling Reaches New Peak at Mid-Year Mark .....Aug. 1 108
U. S. Drilling Record Forecast in 1953.....Aug. 15 102
Rising Costs and Lower Revenue Rates.....Sept. 76
Vast Pipe Line Network Serves the Permian Basin....Oct. 154
Exploratory Drilling Pace Continues High in September.....Nov. 106
Drilling Rates Remain High.....Dec. 109

AUTHOR INDEX—Continued

SMITH, S. S.
Progress in Products Pipe Lines....Feb. 1 201
This New Type Control Instrument....June 214-A

STEAD, FREDERICK L.
Delaware Basin May Be Next Major Oil Province....Oct. 142

STEELE, J. M.
Well Points Whip Quicksand....March 206-D

STEPP, E. G.
What About Gas Turbines?....Nov. 222-D

STEWART, E. O.
Use of Existing Tubing Cuts Workover Costs....June 186

STRIDER, H. L.
Here's How to Correct Your Mud Contamination....May 170

SVEEN, LLOYD W.
How They're Whipping Williston's Winter....Feb. 1 120

SWIFT, GILBERT
Simultaneous Log of Radioactivity Curves Cuts Standby Time in Half....Jan. 122

T

TASMAN, CEVAT E.
The Door's Open in Turkey....March 233

TAYLOR, DONALD M.
New Code for Gas System Piping Is on the Way....Jan. 210
U. S. Pipe Lines to Have 13,910 Added Miles....Feb. 235
The Rock Spread....April 248-A
Mobile Units Now Being Used for Dehydration Plant Repairs....May 255
North America's Largest Crude Oil Line Is Now in Operation....May 256
The U. S.'s Most Powerful Crude Oil Line Pump Station....May 258
United Gas System Serves "The Gulf South"....May 264
How the World's Deepest Submarine Line Was Laid..Sept. 246-H
How They Crossed the Straits of Mackinac....Oct. 304-H
Crisis Every 30 Minutes....Nov. 115
Save $20 Per HP on Station Costs....Nov. 230

TAYLOR, M. R.
'Weathered-In' Lease Problem Being Whipped....Dec. 276

TEISSLER, R. B.
Workovers Revive California Field....March 174

THOMPSON, A. W.
Completion Time Cut by Drilling Progress....Oct. 163

THOMPSON, E. CONWAY
How Electric Valve Operators Work....Nov. 222-R

TOMLINS, EARLE E.
Income Tax Encourages Oil Payments....March 55

TOMLINSON, DR. C. W.
Odd Geologic Structures of Southern Oklahoma....Jan. 90

U

USSERY, J. T.
How to Set Up a Materials Control System....Aug. 1 128
Materials Control Can Save You Money....Dec. 198

W

WANENMACHER, J. M.
Unitization . . . And How It Works....July 191

WARN, FREDERICK G.
Spraberry Structural Conditions
(Part 1)....March 83
(Part 2)....April 100

WATSON, JAMES C
West Texas Discoveries Reach Peak....Oct. 131

WAY, JOHN E.
Healdton Has Big Waterflood Potential....July 190

WELSH, K. R.
Safety Saves Money....Feb. 1 140

WHEELER, HENRY P., JR.
How to Find a Field of Underground Natural Gas Storage....April 264-B

WHITE, LT. COL. FOSTER L.
Casing Can Be Cemented in Permafrost Area....Dec. 119

WICHERSHAM, PRICE D.
Network Computations Solved 8 Times as Fast....Nov. 238

WILLIAMS, ARTHUR R.
New Wash Tank Design
(Part 1)....Sept. 203
(Part 2)....Oct. 278

WILLIAMS, E. L.
Job Talk Promotes Safety . . . by Pinpointing Hazards.June 118

WILLIAMS, DR. O. B.
Little Bugs—Big Problems....June 170

WILLIAMSON, T. D., JR.
How to Choose a Pig....June 232-I

WILLIS, MARSHALL B.
El Paso Natural Completes a Circle of Communication.Jan. 203

WILSON, FRANKLIN G.
Let's Talk About Safety!....March 60

WILSON, GILBERT M.
Tests Prove Discovery at Sturgeon Lake....Feb. 1 246
Canadian D3 Play Is Developing Fast....May 286
Canada....Aug. 15 108
1953 A Fruitful Year for Canada....Dec. 253

WILSON, J. C.
Fracturing Sandstones of the Illinois Basin....Aug. 1 192

WOFFORD, DENVER
Avoid Core Barrel Trouble....July 156

WOODS, H. B.
How to Cut Costs in Crooked Hole Areas
(Part 1)....July 135
(Part 2)....Aug. 1 136
(Part 3)....Sept. 172

Z

ZONDAG, DR. CORNELIUS H.
Global Oil and Trouble Grow Together
(Part 1)....Jan. 237
(Part 2)....Feb. 1 239
Peru . . . Modern-Day Trail Blazer....Nov. 275

SPECIAL ISSUES

Review-Forecast....Feb. 15
Exploration....April
Exposition....May
International Operations....Aug. 15
Drilling Contractors'....Sept.
West Texas-New Mexico....Oct.
Pipe Line....Nov.
Canadian....Dec.

SUBJECT INDEX
WORLD OIL

January-December Issues 1953
Volume 136 No. 1 through Volume 137 No. 7

	Page
Changing Panorama	7
Drilling Articles	7
Drilling Hints	10
Economic, Statistical and Market Articles	10
Editorials	11
Employee Relations, Training and Safety Articles	11
Exploration Articles	12
General Articles	13
International News, Feature and Statistical Articles	14
News Analysis	13
Pipe Line Articles	15
Pipe Line Hints	18
Production Articles	18
Production Hints	19

THE CHANGING PANORAMA

Demand for Government Bonds Is Due to Increase.....Jan. 43
Industry Helps Relieve Shortages.....Jan. 43
Mid-Continent Oil Operators Favor Aggressive Program.Feb. 1 39
Texas Asks Importers' Estimates for '53.....Feb. 1 39
Tideland Snag? .....Feb. 1 39
Changes Proposed in Social Security.....March 39
Mounting Insurance Rates Under Fire.....March 39
Oil Companies Can Strike a Blow for Free Enterprise....April 41
Steady Prices Refute Monopoly Charges.....April 41
Suit on Scurry.....April 41
Texas Compensation Insurance Bill Survives Early Attacks .....April 60
What Our Readers Say About Middle-East Oil.....April 61
Continental Shelf Could Be a Major Source for U. S. Oil..April 64
Is the FPC Ready for a Change of Heart Toward Business? .....May 94
The Spirit of '76 at Work Again.....June 60
There'll Be Some Changes at FTC.....June 60
Kuykendall OK by the Oil Industry.....June 60
Learning Gets a Big Lift.....June 60
Record Pipe Line Program Foreseen.....June 60
Arabian American Is World's Largest Oil Producing Co...July 80
Pipe Line for Coal Is in the Offing.....July 80
Middle-East Gets a Shot in the Arm.....July 80
API for Europe Is Asked by Dwyer.....July 80
OW's Wanted .....July 80
Automatic Controls Are Increasing Efficiency in Oil Industry .....Aug. 1 76
You Can Help Cut Federal Spending.....Aug. 1 76
New LPG Market.....Aug. 1 76
New Refining Process Draws Interest.....Sept. 92
Increase Needed .....Sept. 92
Better Roads, Fewer Traffic Accidents Help Industry.....Oct. 112
U. S. Disposing of Business Holdings.....Oct. 112
Federal Government Urged to Quit Hoarding Public Lands.Nov. 78
Who Really Pays Corporation Taxes?.....Nov. 78
The Farmers' Problems Are Oil Industry Problems, Too...Dec. 76
Will Demand Outstrip Imports by 1960?.....Dec. 76

DRILLING ARTICLES

Acidizing

Compressed Gas Cuts Carthage Acidizing Costs.....Aug. 1 180
P. S. Clinkenbeard
Well Stimulation at North Cowden Pays.....Oct. 264
J. E. Kastrop

Air Drilling—Also See Gas Drilling

What About Compressed Air?.....April 155
Lawrence K. Shallenberger
Aeration of Drilling Fluids . . . A Solution to Lost Circulation? .....Sept. 145
Roy A. Bobo and H. M. (Bill) Barrett

Banking

A Banker Looks at the Contracting Business.....Nov. 140
Eugene McElvaney

Barge—See Offshore

Bits

Current Drilling Practices in West Texas
(Part 1) .....April 141
(Part 2) .....May 180
David Johnston and W. R. Johnston
Completion Time Cut by Drilling Progress.....Oct. 163
A. W. Thompson

Blowout Control—See Degasser

Boilers

Closed Steam System on Drilling Rigs Cuts Boiler Maintenance, Fuel Needs.....Jan. 132
George L. Daggs

Braking Equipment—Drawworks

How to Select and Install Braking Equipment for Your Drawworks .....Jan. 135
Allan Fredhold

Casing

How to Identify Casing in Mixed Strings.....April 144

Cementing

Four-Way Perforating Aids Squeeze Cementing.....April 222
J. E. Kastrop
Casing Can Be Cemented in Permafrost Area.....Dec. 119
Lt. Col. Foster L. White, USAF

Completion Practices

Dual Completion Takes Two Full Size Tubing Strings...Feb. 1 162
Royal W. Reiss and J. E. Kastrop
Dual Completions Pay Off in Illinois.....March 163
Frank H. Hunter
Magnolia Makes an Unusual Completion in Wilcox.....June 176
J. E. Kastrop
Triple Completion Takes Three Tubing Strings.....Nov. 169
Royal W. Reiss

Completions Rates—See "Drilling Activity"

Contractor Credit

A Banker Looks at the Contracting Business.....Nov. 140
Eugene McElvaney

Core Barrel

Avoid Core Barrel Trouble.....July 156
Denver Wofford

DRILLING ARTICLES—Continued

Corrosion
Vulnerability of Drill Pipe to Corrosion Fatigue.....Oct. 200
Stanley C. Moore and A. P. Farr

Crooked Hole
How to Cut Costs in Crooked Hole Areas
(Part 1) .....July 135
(Part 2) .....Aug. 1 136
(Part 3) .....Sept. 172
Arthur Lubinski and H. B. Woods
How to Cut Costs in Crooked Hole Areas.....Oct. 213
J. B. Murdoch, Jr. and Wesley Moore

Deep Drilling
Compounded Power Pumps Speed Drilling.....March 111

Degasser
New Vacuum-Type Degasser Reduces Deep Drilling Hazards .....June 125
R. W. (Woody) Erwin

Depth
Drilling Depth Records Set in Ten Areas.....Feb. 15 146

Derrickman
Heated Shelter Will Protect Derrick Men.....April 130
Derrickman's Sky Hook.....July 152

Directional Drilling
Do You Have a Problem of Directional Drilling?.....July 129
W. H. Cook

Dogleg—See Crooked Hole

Drill Collar
Cut Costs in Crooked Hole Areas
(Part 1) .....July 135
(Part 2) .....Aug. 1 136
(Part 3) .....Sept. 172
Arthur Lubinski and H. H. Woods
How to Cut Costs in Crooked Hole Area.....Oct. 213
J. B. Murdock, Jr., and Wesley Moore
Check Your Hydraulic System to Cut Your Drilling Costs.March 128
Rex G. Hamaker
Rubber Stabilizers are Solving Permain Problems.....Oct. 195
William S. Bachman

Drill Pipe
Vulnerability of Drill Pipe to Corrosion Fatigue.....Oct. 200
Stanley C. Moore and A. P. Farr

Drilling Activity
Completions in November Drop Sharply to 3704.....Jan. 54
1952 Footage Sets Record, Completions Near Peak.....Feb. 1 48
Rigs in Operation Gain Despite Steel Strike.....Feb. 15 140
Drilling Forecasts for 46,988 New Wells.....Feb. 15 129
Warren L. Baker and Cecil W. Smith
Wells Drilled 82.5 Percent by Rotary Method.....Feb. 15 144
Wells Completed 77.4 Percent Owned by Smaller Firms.Feb. 15 144
Drilling Depth Record Set in Ten Areas.....Feb. 15 146
Rig Ownership 85.2 Percent with Contractors.....Feb. 15 145
Completions and Footage Emphasize Deeper Drilling...Feb. 15 132
Contract Drilling Accounts for 91 Percent of U. S. Wells.Feb. 15 142
January Completions Up; Shallow Drilling Active.....March 50
Drilling Takes Usual Drop, But Completions Still High..April 50
Completions Up, But Drilling Falling Behind 1952 Pace...May 102
Cecil Smith
4210 Wells Make May Most Active Month of the Year....July 94
23,304 Completions at Mid-Year Tops Record 23,096 Set in '52.....Aug. 1 90
Record U. S. Drilling Rates Necessary.....Sept. 74
Record Drilling Tempo Maintained; 27,415 Wells Finaled in 7 Months.....Sept. 106
New Completions Record.....Oct. 126
Basin Has 12 Percent of U. S. Rigs.....Oct. 155
New Mexico Drilling Still Active.....Oct. 156
Keith Anderson
Completions Decline .....Nov. 92

Drilling Contractor
Contract Drilling Accounts for 91 Percent of U. S. Wells.Feb. 15 142
Rig Ownership 85.2 Percent with Contractors.....Feb. 15 145
Contract Drilling Highly Competitive.....Sept. 78
Warren L. Baker
What the Operator Wants from a Drilling Contractor.....Sept. 80
A. E. Chester

Drilling Costs
Drilling Costs Too High (Editorial).....Feb. 15 49
Warren L. Baker
Drilling Costs Can Be Cut (Editorial).....June 41
Warren L. Baker
Drilling Costs Slow Discovery Rate (Editorial).....Sept. 73
Warren L. Baker
Drilling Costs Slow Discovery Rate.....Sept. 73
Warren L. Baker
Rising Costs and Lower Revenue Rates.....Sept. 76
Cecil W. Smith
Well Completion Costs Rise Sharply.....Sept. 84
Philip L. McLaughlin

Drilling Engineer—See Training

Drilling Platform—See Offshore

Drilling Practices
How They're Whipping Williston's Winter.....Feb. 1 120
Lloyd W. Sveen
Running and Pulling Pipe Under Pressure.....Feb. 1 111
W. L. (Luke) Long
Compounded Power Pumps Speed Drilling.....March 111
How San Juan Operators Are Solving Mud Problems....March 136
E. J. Mayhew
Current Drilling Practices in West Texas
(Part 1) .....April 141
David Johnston and W. R. Johnston
Drilling Problems in the Williston Basin.....April 148
Tom Doughtery
Current Drilling Practices in West Texas.....May 140
David Johnston and W. R. Johnston
Drilling Operations Continue the Year Round in Canada...May 169
Vern H. Hunter
Ohio's Slim Hole Rig Cuts Exploratory Drilling Costs.....June 107
Gerald Burgess and H. D. Hoopman
Here are Factors Affecting Drill Hole Conditions.....July 144
Victor Horner
Completion Time Cut by Drilling Progress.....Oct. 161
A. W. Thompson
Rubber Stabilizers are Solving Permian Problems.....Oct. 195
William S. Bachman
Crisis Every 30 Minutes.....Nov. 115
Donald M. Taylor

Dual Completions—See Completion Practice

Employee Relations
Be Safe Though Small.....Jan. 140
Gordon Oliver
Job Talk Promotes Safety . . . By Pinpointing Hazards...June 111
E. L. Williams
Selling Safety . . . The Goal of the AAODC.....Sept. 161
H. W. Davidson
Try Barbecue and Bonuses.....Sept. 170
Al Reese

Engines
How to Maintain Correct Engine Temperatures.....March 114
A. J. Boyer
Maintenance Means Money in Your Pocket.....Sept. 156
Ralph F. Blair
Now's The Time to Winterize!.....Nov. 120
What Should be Done to Protect Engines?.....Nov. 122
John A. Boatman

Feedwater Treater—See Boiler

Fire Extinguisher
How to Make Fire Extinguisher from Propane Bottle.....July 134

Fishing Tool
New Nitrogen Impact Jar Eliminates Jarring Action....March 124

Footage
1952 Footage Sets Record, Completions Near Peak.....Feb. 1 48
Completions and Footage Emphasize Deeper Drilling...Feb. 15 132

Gas Drilling
Crisis Every 30 Minutes.....Nov. 115
Donald M. Taylor

General
Shop-Made Rig Speeds Operations.....Jan. 131
A. R. Frank
New Trailer-Mounted Rig Saves Valuable Rig-Up Time..March 120
R. E. Fuller
Here's How to Rig a Unitized Trap.....April 174
W. L. Broussard
The Rig With 100 Hints.....May 147
Dudley Madole
Skid Eliminates Wear on Equipment.....May 193
They're Overcoming Drilling Problems in Saudi Arabia..Aug. 1 146
L. C. Carson
Maintenance Means Money in Your Pocket.....Sept. 156
Ralph F. Blair
Rig Modernization Will Improve . . ..Sept. 153
Laurence E. Ferguson
Unitized Sections Make Rig Winterizing Easier.....Nov. 152
Pullback Device Making Derrickman's Job Easier.....Dec. 144
What Are the Problems in the Delaware Basin?.....Dec. 152
Philip L. McLaughlin

Hauling
Hauling Problems .....Sept. 181
Anthony Gibbon

Heater—See Rig Winterization

Hydraulic System
Check Your Hydraulic System to Cut Your Drilling Costs.March 128
Rex G. Hamaker

Jar—See Fishing Tool

Logging
Simultaneous Log of Radioactivity Curves Cuts Standby Time in Half.....Jan. 122
Gilbert Swift and C. C. Roberts
Electrical Conduction in Fluid-Saturated Rocks.....Feb. 1 113
Dr. B. F. Howell, Jr.
Electrical Conduction in Fluid-Saturated Rocks.....March 142
Dr. B. F. Howell, Jr.
Vacuum Method Detects Gas-Bearing Formations.....Oct. 218
Jack E. Bliss
New Well Logging Developments
(Part 1) .....Dec. 134
L. A. Puzin

DRILLING ARTICLES—Continued

Lost Circulation
Lost Circulation Can Be Avoided or Minimized.....May 150
J. M. Bugbee
New Vacuum-Type Degasser Reduces
Deep Drilling Hazards.....June 125
R. W. (Woody) Erwin
Procedures To Be Used in Fighting Lost Circulation.....June 132
J. M. Bugbee
They're Overcoming Drilling Problems.....Aug. 1 146
L. C. Carson
Aeration of Drilling Fluids . . . A Solution
to Lost Circulation?.....Sept. 145
Roy A. Bobo and H. M. (Bill) Barrett
Bentonite-Diesel Oil Squeeze.....Oct. 222
D. D. Dawson, Jr.
Crisis Every 30 Minutes.....Nov. 115
Donald M. Taylor

Maintenance
How to Maintain Correct Engine Temperatures.....March 114
A. J. Boyer
Avoid Core Barrel Trouble.....July 156
Denver Wofford
Maintenance Means Money in Your Pocket.....Sept. 156
Ralph F. Blair
Rig Modernization Will Improve.....Sept. 156
Laurence E. Ferguson
What Should Be Done To Protect Engines?.....Nov. 122
John A. Boatman

Maintenance of Equipment (Monthly Graphic Feature)
'Green' Bit Care.....Jan. 130
Radiator Care.....Feb. 1 118
V-Belt Care.....March 134
Drill Pipe and Casing Care.....April 162
Care of Blowout Preventer Lines.....May 178
Suction Hole Care.....June 144
How to Handle Boxed Supplies.....July 154
Sand Line Spooling Care.....Aug. 134
Mud Suction Line Care.....Sept. 165
Blowout Preventer Care.....Oct. 210
Wire Line Care.....Nov. 138

Marine—See Offshore

Material Controls
How to Set Up a Materials Control System.....Aug. 1 128
J. T. Ussery

Mixed Strings—See Casing

Mixers
Fluid Mixers Being Used to Mix Drilling Mud.....Sept. 150
J. Y. Oldshue

Mud—General
How to Train Mud Engineers.....Jan. 115
Fred Chisholm and B. Q. Green
Planning Cuts Mud Costs.....Feb. 1 134
Frank S. Bell
How to Train Mud Engineers
(Part 2).....Feb. 1 125
Fred Chisholm and B. Q. Green
How San Juan Operators are Solving Mud Problems....March 136
E. J. Mayhew
Here's How to Rig a Unitized Trap.....April 174
W. L. Broussard
Here's How to Correct Your Mud Contamination.....May 170
H. L. Strider
Here's How to Pull A Dry Pipe—And Save Money.....May 186
New Vacuum-Type Degasser Reduces
Deep Drilling Hazards.....June 125
R. W. (Woody) Erwin
Here are Factors Affecting Drill Hole Conditions.....July 144
Victor Horner
Bulk Mud Saves Crew Time . . . Holds Waste
To a Minimum.....Aug. 1 126
Philip L. McLaughlin
Aeration of Drilling Fluids . . . A Solution
to Lost Circulation?.....Sept. 145
Roy A. Bobo and H. M. (Bill) Barrett
Fluid Mixers Being Used to Mix Drilling Mud.....Sept. 150
J. Y. Oldshue
Bentonite-Diesel Oil Squeeze.....Oct. 222
D. D. Dawson, Jr.
Filter Press Control Facilitates Lab Scheduling.....Nov. 151
C. J. Engle and W. E. Bergman

Mud Systems—See Mud

Offshore
Luxury and Efficiency Afloat.....April 164
Philip L. McLaughlin
Is This the Answer to Offshore Operations?.....June 116
Talking Drilling Barges into Position . . . .Nov. 136

Perforating
Four-Way Perforating Aids Squeeze Cementing.....April 222
J. E. Kastrop

Power Transmission—See Rotary Drives

Preheater—See Boiler

Pumps—Mud
Compounded Power Pumps Speed Drilling.....March 111

Radar
Talking Drilling Barges into Position . . . .Nov. 136

Rig Modernization
Rig Modernization Will Improve . . . .Sept. 158
Laurence E. Ferguson

Rig Ownership
Rig Ownership 85.2 Percent with Contractors.....Feb. 15 145

Rig Winterization
How They're Whipping Williston's Winter.....Feb. 1 120
Lloyd W. Sveen
Portable Heater Can Serve Many Uses on Rig Floor.....March 140
Heated Shelter Will Protect Derrick Men.....April 180
Drilling Operations Continue the Year Round in Canada...May 160
Vern H. Hunter
Now's the Time to Winterize!.....Nov. 120
Unitized Sections Make Rig Winterizing Easier.....Nov. 152

Rigs
Shop-Made Rig Speeds Operations.....Jan. 131
A. R. Frank
New Trailer-Mounted Rig Saves Valuable Rig-Up Time..March 120
R. E. Fuller
The Rig With 100 Hints.....May 147
Dudley Madole

Rotary Drives
Power Transmission on Modern Rotary Rigs
(Part 1).....Nov. 128
(Part 2).....Dec. 124
M. L. Rizzone

Safety
Be Safe Though Small.....Jan. 140
Gordon Oliver
Field Testing Can Prevent Flange Leaks.....May 201
Marvin R. Jones and Frank N. Baldwin, Jr.
Job Talk Promotes Safety . . . by Pinpointing Hazards...June 118
E. L. Williams
How to Make Fire Extinguisher from Propane Bottle.....July 134
Selling Safety . . . The Goal of the AAODC.....Sept. 168
H. W. Davidson
Try Barbecues and Bonuses.....Sept. 170
Al Reese
How You Can Combat Hydrogen Sulfide Hazards.....Nov. 190
George Austin

Slim Hole
Ohio's Slim Hole Rig Cuts Exploratory Drilling Costs.....June 107
Gerald Burgess and H. D. Hoopman

Slings—Also see Wire Rope
How to Select Correct Sling for a Job.....Aug. 1 121
Walter C. Richards

Snubbing Pipe
Running and Pulling Pipe Under Pressure.....Feb. 1 111
W. L. (Luke) Long

Stabilizers
Rubber Stabilizers are Solving Permian Problems.....Oct. 195
William S. Bachman

Steam System—See Boilers

Testing
Vacuum Method Detects Gas-Bearing Formations.....Oct. 218
Jack E. Bliss
Filter Press Control Facilitates Lab Scheduling.....Nov. 151
C. J. Engle and W. E. Bergman

Testing, Drill Stem
Subsurface Pressures Tell the Story.....Feb. 1 155
C. C. Olsen

Torque Converter—See Rotary Drives

Training—Personnel
How to Train Mud Engineers
(Part 1).....Jan. 115
(Part 2).....Feb. 1 125
Fred Chisholm and B. Q. Green

Transportation—See Hauling

Trucking—See Hauling

Well Surveying—See Logging

Wire Rope
Cutoff Technique Reduces Time Requirements 50%.....Feb. 1 124
R. D. Meyers
How to Select Correct Sling for a Job.....Aug. 1 121
Walter C. Richards

Workovers
Workovers Revive California Field.....March 174
R. B. Teissier
Mud-Stuck Tubing Recovered by String-Shot
Backoff Method.....April 200
Floyd Scott, Jr.
Use of Existing Tubing Cuts Workover Costs.....June 186
E. O. Stewart and Henry Priesmeyer

DRILLING HINTS

Agitator Blends Mud Mixtures....Jan. 146
Tanks on Skids Moved Easily....Jan. 146
Mud Tank Has Service Line....Jan. 146
Rack Constructed of Oil Drill Pipe....Jan. 148
Unitized Controls Operate Devices....Jan. 148
Ramp Supports Portable Rig....Jan. 150
Exhaust Line Cuts Rig-Up Time....Jan. 152
This Counter-Weight Holds Finger Bars....Jan. 152
An Auxiliary Ramp Proves Multi-Purpose....Jan. 153
Permanent Electric Switchboard Practical....Jan. 153
Fire Box Mat Protected by Tray....Jan. 154
Mud Mixing Device Adjusts Flow Volume....Jan. 154
Portico Protects Magneto Ignition....Jan. 156
This Iron Stand Protects Swivel....Feb. 1 146
Hook Reduces Chain Hazards....Feb. 1 146
Doghouse Support is Collapsible....Feb. 1 146
Lifting Packoff Units Made Easier....Feb. 1 148
Flume Separates Cuttings, Fluid....Feb. 1 148
Handy Rack Holds Hand Tools....Feb. 1 148
Discarded Panel Used as Vise Base....Feb. 1 150
Davit Crane Lifts Pump Suction Hose....Feb. 1 150
Catwalks Relieve Doghouse Traffic....Feb. 1 151
Doghouse Built Over Change House....Feb. 1 151
Oil Drained Into Convenient Drum....Feb. 1 151
Pumps Use Same Discharge Line....Feb. 1 152
Hanger Devised for Wire Spool....Feb. 15 164
Sucker Rods Form Doghouse Steps....Feb. 15 164
Mud Gun Can be Directed Five Ways....Feb. 15 164
Carpet Sweeper is Forge Blower....Feb. 15 166
Wrist Pin Wrench Made of Steel Slap....Feb. 15 166
Simple Hook-Up Unitizes Mud Tank....Feb. 15 168
Suction Tank Provided with Flume....Feb. 15 168
Over the Rim Suction Piping is New....Feb. 15 172
Washdown Pump Run Off Flywheel....Feb. 15 172
Bail Facilitates Tool Box Handling....Feb. 15 174
Truck Rack Holds Arc Welding Cable....Feb. 15 174
Housed Radiator is Side-Mounted....Feb. 15 178
Light is Mounted on Derrick Floor....March 148
Skid Transports Christmas Trees....March 148
Rack Helps to Keep Rig Tidy....March 148
This Tool Dock Keeps Boxed Materials Dry....March 150
Skid-Mounted Tanks Facilitate Handling....March 150
U Bolt Eyelet is Useful in Hoisting....March 150
Tool Box on Skids is Durable....March 152
Hose Holder is Made of Bent Steel Rod....March 152
Vise on Steel Bench Ideal for Rugged Use....March 156
Standardizing Pump Flow Pays....March 158
Roof Protects Electric System....March 160
Tool Box Fits Under Drawworks....March 160
Tarpaulin Curtains are Durable....April 182
Doghouse Rest on Toolhouse....April 182
Holes are Cut in Trench Cover....April 182
Rack on Truck Keeps Tools Clean and Handy....April 184
Highline Post Made of Pipe is Sturdy....April 184
Wire Storage Spool Protects Excess Hose....April 186
Traffic Guides Used on Guyline Anchors....April 186
Compact Drum Rack Used on Drilling Rig....April 188
Cylindrical Toilet Built in Steel Unit....April 188
Chain-Come-Along Tightens Guy Wires....April 188
Walkway Folds Up Over Mud Ditch....April 192
Engine Roof is Hinged to Derrick....April 192
Bed Rail Pipe Rack is Demountable....May 188
Chain Gate is Trespass-Proof in Drilling Area....May 188
Storage Hook Protects Expensive Cat Rope....May 190
Steel Fram Groups Preventer Wheels....May 194
Rack is Safe Place for Washdown Hose....May 196
Skid Eliminates Wear on Equipment....May 198
Relief Line Connects Suction....June 146
Hinged Slot Gates Avert Deflection....June 146
Fenders Protect Pipe Rack Sections....June 156
Rotating Tool Box Conserves Space....June 158
Cut Outs on Low Pressure Pipe Lines Made Safely....June 234
Electricity Keeps Engines Warm....June 234
Light Pipe Skids Prevent Slipping....June 234
Hydraulic Clamp Aligns Casing....June 238
Portable Shacks are Economical....June 240
V-Block Speeds Pipe Fabrication....June 240
Walkways Direct Pump Room Traffic....June 240
Permitting Access to Equipment....July 160
Cooling Mud Suction Cuts Pump Repairs....July 160
Making Bucket Stand....July 160
Adjusting Belt Tension with Turnbuckle....July 162
Constructing Compact Header Manifold....July 162
Storing Catalogs....July 165
Speeding Workover Jobs....July 166
Sledding Over Mud....July 168
Lubricating Chains....July 168
Collapsing Rig Floor....July 170
Transporting Pipe....July 172
Mounting Spare Tires on Safe Removal....Aug. 1 152
Guiding Pipe on Ramp....Aug. 1 152
Prevent Boiler Damage....Aug. 1 152
Simplifying Mud Pump Piping....Aug. 1 154
Roofs Protect Pumps from Weather....Aug. 1 158
Saving Waste Mud....Aug. 1 158
Anchoring Pipe Tongs....Aug. 1 160
Baling Empty Bags....Aug. 1 160
Mounting Water Cooler....Aug. 1 161
Mounting Vise on Post....Aug. 1 161
Racking Fuel Oil Drums....Aug. 1 162
Rounding Tank Corners....Aug. 1 162
Hoisting Oil Storage Drums Safely....Sept. 184
Fishing by New Methods....Sept. 184
Making Vertical Ladder....Sept. 171
Protecting Tool Joints....Sept. 188
Making Motor Shelf....Sept. 188
Reeling Washdown Hose....Sept. 191
Preventing Tool Loss....Sept. 191
Expediting Grease Jobs....Sept. 191
Standing Drill Pipe....Sept. 195
Mounting Tape Holder....Sept. 195
Covering Shear Pins....Sept. 196
Breaking Out Nipples....Sept. 196
Increasing Leverage....Sept. 198
Drying Clothes....Sept. 198
Spooling Electric Cables....Oct. 238
Picking up Bits....Oct. 238
Moving Pipe Thrower....Oct. 238
Supporting Ramp....Oct. 240
Mounting Rig Lights....Oct. 240
Transporting Bunk House....Oct. 240
Increasing Leverage....Oct. 244
Making Cooler Stand....Oct. 244
Moving Equipment on Skids....Oct. 246
Constructing Walkway....Oct. 246
Leveling Structures....Oct. 247
Attaching Muffler to Engine....Oct. 248
Regulating Suction Lines....Nov. 156
Combining Structures....Nov. 156
Moving Small Buildings....Nov. 158
Unitizing Generating Plant....Nov. 158
Installing Dump Valve....Nov. 158
Bypassing Shale Shaker....Nov. 160
Storing Lube Oil....Nov. 160
Installing Panel on Mud Tank....Nov. 162
Widening Bit Courses....Nov. 164
Supporting Weight....Nov. 164
Unitizing Water Well Pumps....Nov. 166
Mounting Filters....Nov. 166
Dumping Sand Through Downspouts....Dec. 158
Making Tool Box....Dec. 158
Winching Suction....Dec. 160
Hauling Whipstock....Dec. 160
Protecting Wire Line....Dec. 164
Splitting Bags....Dec. 164
Combining Fuel Tank....Dec. 166
Lighting Drilling Rig....Dec. 168
Erecting Pipe Rack....Dec. 168
Installing Dump Valve....Dec. 170

ECONOMICAL, STATISTICAL AND MARKET ARTICLES

Completions—See Drilling Activity

Consumption—See Demand

Demand

More U. S. Crude Needed in '53....Feb. 1 50
Petroleum Demand Requires 1 Percent More Crude....Feb. 1 54
L. J. Logan
All Oils in U. S. Annually Since 1918....Feb. 15 54
Distillate Fuel in U. S. Annually Since 1932....Feb. 15 60
Motor Fuel in U. S. Annually Since 1918....Feb. 15 59
Residual Fuel Oil in U. S. Annually Since 1932....Feb. 15 60
World Supply and Demand....Aug. 15 59
Robert E. Spann
Oil Use in the U. S. Continues to Climb....Aug. 15 96
L. J. Logan

Discoveries

Oil, Gas and Distillate Discoveries by States in 1952....Feb. 15 96
Exploratory Drilling Remains High After Slight Decline....Jan. 100
Exploratory Drilling Sets New Record During 1952....Feb. 1 98
Exploration Record Continues Upward Trend....Feb. 15 93
Cecil W. Smith
Exploratory Drilling Off to a Fast Start....March 98
Cecil W. Smith
Exploratory Drilling Remains Well Ahead of 1952 Pace....April 120
Cecil W. Smith
Exploratory Drilling Continues Record-Breaking Pace for Year....May 130
Cecil W. Smith
U. S. Discoveries in March....May 132
Increase in Activity Sends Exploratory Completions Up....June 97
Cecil W. Smith
Upswing Continues, 1010 Tests in May....July 116
Cecil W. Smith
Exploratory Drilling Reaches New Peak at Mid-Year Mark....Aug. 1 108
Cecil W. Smith
Exploratory Well Completions Reach Year's Highest Point....Sept. 124
Exploratory Drilling Pace Continues High in September....Nov. 106
Cecil W. Smith
U. S. Discoveries in September....Nov. 108

Drilling Activity

U. S. Monthly Trends by States....Each Issue
Drilling Rigs in U. S. by Months Since 1938....Feb. 15 141
Drilling Rig Ownership....Feb. 15 145
Drilling Depth Records by States....Feb. 15 150
Footage Drilled Annually Since 1941....Feb. 15 133
Footage Drilled by States in 1952....Feb. 15 138
Average Depth per Well in U. S. Since 1941....Feb. 15 133
Average Depth per Well in U. S. by States During 1952....Feb. 15 138
Wells Drilled in U. S. Since 1859 by Years....Feb. 15 134
Wells Drilled in U. S. by States During 1952....Feb. 15 138
Forecast of Drilling Activity for 1953....Feb. 15 129
Warren L. Baker and Cecil W. Smith
World Completions and Footage....Aug. 15 61
Al Reese
U. S. Drilling Record Forecast in 1953....Aug. 15 102
Warren L. Baker and Cecil W. Smith
Record U. S. Drilling Rates Necessary....Sept. 74

ECONOMICAL, STATISTICAL AND MARKET ARTICLES—Continued

Completions in November Drop Sharply to 3704.....Jan. 54
1952 Footage Sets Record, Completions Near Peak.....Feb. 1 48
January Completions Up; Shallow Drilling Active.....March 50
Drilling Takes Usual Drop; But Completions Still High...April 50
Completions Up, But Drilling Falling Behind 1952 Pace...May 102
Cecil W. Smith
Lead Piled Up in First Four Months is Shrinking.....June 74
4210 Wells Make May Most Active Month of the Year.....July 94
23,304 Completions at Mid-Year Tops Record
23,096 Set in '52.....Aug. 1 90
Record Drilling Tempo Maintained; 27,415 Wells
Finaled in 7 Months.....Sept. 106
New Completions Record.....Oct. 126
Completions Decline.....Nov. 92
Completions Bounce Back.....Dec. 90
Drilling Must Expand to Meet Demands, Baker Tells API.Dec. 84

Drilling Costs
Well Completion Costs Rise Sharply.....Sept. 84
Philip L. McLaughlin
Rising Costs and Lower Revenue Rates.....Sept. 76
Cecil W. Smith
Drilling Costs Slow Discovery Rate.....Sept. 73
Warren L. Baker

Exploratory Drilling Activity

Exports-Imports
Exports and Imports Margin to Widen Further.....Feb. 15 66
U. S. Exports and Imports Annually Since 1918.....Feb. 15 67
Exports from Various Countries in 1951 and 1952.....Feb. 15 262
Imports vs. American Control of Oil Resources.....May 84
Robert E. Spann
Imports a Growing Problem for U. S.....Nov. 60
L. J. Logan

Imports—See Exports-Imports

Market Conditions and Outlook
Excessive Gasoline Stocks Likely.....Jan. 44
Ray L. Dudley and Warren L. Baker
Reduced Crude Runs Needed.....Feb. 1 40
Stocks of Oils Too High in Three Categories.....Feb. 15 74
General Crude Price Increase Unlikely.....March 40
Ray L. Dudley and Warren L. Baker
Economic Picture Brightens.....May 98
Ray L. Dudley and Warren L. Baker
Reduced Crude Stocks Desirable.....June 64
Ray L. Dudley and Warren L. Baker
High Supply Endangers New Prices.....July 84
Ray L. Dudley and Warren L. Baker
Excessive Supply Darkens Outlook.....Aug. 1 80
Ray L. Dudley and Warren L. Baker
Gasoline Stocks are Too High.....Sept. 96
Ray L. Dudley and Warren L. Baker
Output Must Be Curtailed.....Oct. 116
Ray L. Dudley and Warren L. Baker
Economic Position Improves.....Nov. 82
Ray L. Dudley and Warren L. Baker
Economic Position Can Be Improved.....Dec. 80
Ray L. Dudley and Warren L. Baker
Will Demand Outstrip Imports by 1960?.....Dec. 76

Natural Gas
Marketed U. S. Natural Gas Production by States,
Annually Since 1906.....Feb. 15 199
Natural Gas Sales, Customers and Revenues in
1951 and 1952.....Feb. 15 196
Natural Gas Value of U. S. Marketed Production
Since 1906.....Feb. 15 199
Natural Gas Producing Wells Yearly Since 1918.....Feb. 15 194
Natural Gas Reserves in U. S.....Feb. 15 196
Natural Gas Wells Drilled in U. S.....Feb. 15 132

Oil-Using Units
Oil-Using Units Continue Rapid Growth.....Feb. 15 76

Petroleum Trends in U. S.
An illustrated, statistical monthly feature showing
trends by months in:
Crude Oil Production
Crude Runs to Stills
Crude Oil Stocks
Crude Imports
Distillate Fuel Production and Stocks
Gasoline Production and Stocks
Footage Drilled
Imports
Rigs Running
Residual Fuel Production and Stocks

Pipe Line
Pipe Line Mileage Laid in U. S. Annually by Type
Since 1939.....Feb. 15 235

Prices
Average U. S. Crude Oil Price at Well Annually
Since 1859.....Feb. 15 190
Average Gasoline Prices in 50 Cities Since 1918.....Feb. 15 69
Petroleum Prices to Remain Generally Stable.....Feb. 15 68
Don Kliewer
Better Use of Statistical Data.....Dec. 57
Warren L. Baker

Producing Wells
Forecast of U. S. Wells to go on Artificial Lift in 1953..Feb. 15 152
Artificial Lift Wells in U. S. by States at End
of 1951 and 1952.....Feb. 15 209
U. S. Producing Depth Record by States.....Feb. 15 205
Oil Wells Producing in U. S. Yearly Since 1918.....Feb. 15 208
Gas Wells Producing in U. S. Yearly Since 1918.....Feb. 15 194
World Producing Wells by Countries.....Aug. 15 78

Production
U. S. Natural Gas Production by States Annually
Since 1906.....Feb. 15 199
U. S. Annual Crude Oil Production by States
Since 1859.....Feb. 15 188-190
U. S. Annual and Daily Crude Oil Production Since 1918.Feb. 15 183
Marketed LPG Production in U. S., by Uses,
Annually Since 1922.....Feb. 15 214
Natural Gasoline Production in U. S., by Years
Since 1918.....Feb. 15 192
World Production by Countries, Annually Since 1857...Feb. 15 270
World Crude Production by Countries.....Aug. 15 63
U. S. Crude Production at New High.....Aug. 15 106

Refining Activity
Crude Runs to Stills in U. S. Annually Since 1918.....Feb. 15 210
Major Refined Product Output in U. S. During
1951 and 1952.....Feb. 15 211
World Refining Operations by Countries.....Aug. 15 80

Report from Observatory (Monthly Feature)—See Market Conditions and Outlook

Reserves
Crude Reserves in U. S. at End of Year Since 1900.....Feb. 15 202
Liquid Hydrocarbon Reserves in U. S. by States,
End of 1951.....Feb. 15 201
Natural Gas Reserves in U. S.....Feb. 15 195
New Reserves in 1952 Fall Far Short of 1951 Peak.....April 66
L. J. Logan
World Crude Reserves by Countries.....Aug. 15 78
Don Kliewer

Stocks—See Market Conditions and Outlook

Tanker Fleet

Wells Drilled—See Drilling Activity

Wildcat Discoveries—See "Discoveries"

Wildcat Drilling—See "Exploratory Drilling Activity"

EDITORIALS

Good Things Ahead.....Jan. 41
Warren L. Baker
Higher California Prices Needed.....Feb. 1 37
Warren L. Baker
Drilling Costs Too High.....Feb. 15 49
Warren L. Baker
Attending the Exposition?.....March 37
Ray L. Dudley
Our Time-Saver Catches On.....April 39
Ray L. Dudley
Water-Flooding Like Wildcatting.....May 75
Warren L. Baker
Costs Can Be Cut.....June 41
Warren L. Baker
Why Do They Call It That?.....July 61
Ray L. Dudley
Picking on Oil Again.....Aug. 1 57
Warren L. Baker
Drilling Costs Slow Discovery Rate.....Sept. 73
Warren L. Baker
Cartel Suit Should Be Heard.....Oct. 93
Warren L. Baker
Have You Noticed It?.....Nov. 59
Ray L. Dudley
Better Use of Statistical Data.....Dec. 57
Warren L. Baker

EMPLOYEE RELATIONS, TRAINING AND SAFETY ARTICLES

Let's Talk About Safety!.....March 60
Franklin G. Wilson
Industry Safety Record is the Best in History.....June 59
How Much Authority Should Safety Directors Have?...Aug. 1 60
Al Reese
Why They Don't Get Hurt on Old Rig 25.....Nov. 66
Al Reese
What Management Expects of Engineers.....March 64
Frank Lindeman, Jr.
How to Win Friends . . . and Help Students.....Sept. 83
How to Sell Ideas to Management.....Oct. 99
Prof. M. L. Powers
The Air-Conditioned Roughnecks of Breton Sound.....Oct. 323
Al Reese
How Are Your Press Relations?.....Dec. 58
Al Reese

EXPLORATION, GEOLOGICAL AND GEOPHYSICAL ARTICLES

Aerial Photography

Accessibility Surveys (in Canada) Cut Costs.....Dec. 93
P. H. Blanchet, B. Kavanagh and F. E. Prebble

Associations

Three Exploration Societies Meet in Houston March 23-26 .....March 90
Exploration Societies Look to Future.....April 76
Audience Got the Point! (Beam of light used as pointer for slides at AAPG meeting.).....April 80
AAPG Moves into New Headquarters in Tulsa.....April 88

Bacteria

How Micro-Organisms Can Aid Search for Oil.....March 95
Dr. Wilhelm Schwartz and Dr. Adelheid Mueller

Canada

Interpretation of Seismic Data in Locating Reefs in Alberta .....Feb. 1 86
P. I. Bediz
Accessibility Surveys (in Canada) Cut Costs.....Dec. 93
P. H. Blanchet, B. Kavanaugh and F.E. Prebble

Discoveries

A monthly feature, appearing in each issue. Gives significant data on new fields, new pay horizons, and field extensions in U. S. Presented along with monthly statistical articles indexed below under the heading, "Exploratory Drilling Activity."

Editorials Concerning Exploration

Are We Using Our Freedoms? (Taking advantage of them in searching for petroleum.).....April 73
Curtis H. Johnson
The Petroleum Geologist (His Responsibilities and Opportunities.) .....April 74
Morgan J. Davis

Electrical Methods

Surface Electrical Method Detects Oil Directly.....Feb. 1 93
H. M. Evjen

Exploratory Drilling Activity (Monthly Feature)

Exploratory Drilling Remains High After Slight Decline..Jan. 100
Exploratory Drilling Sets New Record During 1952.....Feb. 1 98
Exploratory Drilling Off to a Fast Start.....March 98
Cecil W. Smith
Exploratory Drilling Remains Well Ahead of 1952 Pace..April 120
Cecil W. Smith
Exploratory Drilling Continues Record-Breaking Pace for Year .....May 130
Cecil W. Smith
Increase in Activity Sends Exploratory Completions Up..June 97
Cecil W. Smith
Upswing Continues, 1010 Tests in May.....July 116
Cecil W. Smith
Exploratory Drilling Reaches New Peak at Mid-Year Mark .....Aug. 1 108
Cecil W. Smith
Exploratory Well Completions Reach Year's Highest Point.Sept. 124
Exploratory Wells Being Completed at a Record Rate.....Oct. 186
Cecil W. Smith
Exploratory Drilling Pace Continues High in September...Nov. 106
Cecil W. Smith
Rates Remain High.....Dec. 109
Cecil W. Smith

Exploratory Drilling Outlook (Annual Forecast)

Prospecting Outlook Is for Accelerated Activity (Forecasts of Exploratory Drilling Activity, by Districts).....Feb. 15 101

Florida

Northwestern Florida . . . A New Oil Province?.....Aug. 1 99
E. G. Jeffreys

Geophysical Crews

Geophysical Crews Busy in Record Numbers.....Feb. 1 100
Geophysical Activity Reaches All-Time High in 1952.....April 82
Dr. E. A. Eckhardt

Gravity Method

New Gravity Approach Aids Reef Interpretation.....May 116
Richard A. Pohly

Illinois Basin

What Are the Opportunities in the Illinois Basin?.....May 111
William E. Brubeck

Kentucky

Can Western Kentucky Become An Active Oil Producing Area?.....March 93
W. W. Hagan

Magnetic Methods

Improved Magnetic Method Can Avoid Drilling Failures...Jan. 87
Mark Milstein

Michigan

Surface Minerals Reveal Michigan Structures.....Dec. 100
Bernard H. Lasky

Mineralization Surveys

Surface Minerals Reveal Michigan Structures.....Dec. 100
Bernard H. Lasky

Mississippi

Mississippi's Black Warrior Basin Yields Gas Condensate (Part 1 of a 2-part article).....June 77
Frederic F. Mellen
Black Warrior Basin—The Geology Is Favorable (Part 2 of a 2-part article).....July 97
Frederic F. Mellen

Oklahoma

Odd Geologic Structures of Southern Oklahoma.....Jan. 90
Dr. C. W. Tomlinson
Pennsylvania Cross Sections of Central Oklahoma.....Feb. 1 83
What Are the Possibilities in Beaver County, Oklahoma?.June 84
Wayne H. Grimes

Paleontology

Some Facts About Fossils.....Jan. 96
Foraminifera—An Evaluation.....April 75
Clifford C. Church

Radio Method of Oil Exploration

New Oil-Finding Method Tested.....Nov. 98
R. B. Pratt

Raton Basin (New Mexico-Colorado)

Why Has the Raton Basin Been Ignored?.....Oct. 180
William A. Heck

Reefs

Interpretation of Seismic Data in Locating Reefs in Alberta.....Feb. 1 86
P. I. Bediz
New Gravity Approach Aids Reef Interpretation.....May 116
Richard A. Pohly

Safety

Safety Starts at the Top (in Geophysical Work).....Nov. 95
John F. Imle

Seismograph

Interpretation of Seismic Data in Locating Reefs in Alberta.....Feb. 1 86
P. I. Bediz
Cable Handling Device Includes New Features.....April 107
John E. Ortloff
New Seismic Computing Method Fast and Efficient....Aug. 1 93
Dr. R. B. Rice
Seismograph Pays Off in Kansas.....Sept. 109
Robert H. Glover

Slide Rule for Dip Problems

Subsurface Problems Are Easier to Solve (with Specially Designed Slide Rule).....Sept. 118
B. Osborne Prescott

Statistics (Exploratory Drilling)

Exploration Record Continues Upward Trend (Annual Statistics) .....Feb. 15 93
Cecil W. Smith

Subsurface Geologic Correlations

Mistakes Can Be Costly in Geologic Correlations.....July 109
Dr. Carl A. Moore

Taxes

Capitalization of Exploration Expenses
(Part 1) .....April 112
(Part 2) .....May 126
D. L. Shepherd

West Texas

Spraberry Structural Conditions
(Part 1) .....March 83
(Part 2) .....April 100
G. Frederick Warn
Truncation-Type Traps Offer a New Horizon.....Oct. 177
John Ryan
Delaware Basin May Be Next Major Oil Province.....Oct. 142
Frederick L. Stead
West Texas Discoveries Reach Peak.....Oct. 131
James C. Watson

Wildcat Discoveries—See "Discoveries"

Wildcat Drilling—See "Exploratory Drilling Activity"

World Reserves

Politics Threaten World Oil Adequacy.....April 90
Warren L. Baker and Don Kliewer

GENERAL ARTICLES

Exposition
Tulsa Is Ready to House 25,000 Visitors to IPE.....Feb. 15 295
Barton A. Myers
Tulsa Is Ready for the Oil Show.....May 81
This Is the Oil Show.....June 43

Fires
International Fireman—M. M. Kinley (Part 1).....July 63
Al Reese
M. M. Kinley, International Fireman (Part 2).....Aug. 1 63
Al Reese
The Man Who Wasn't Blown Up.....Dec. 68
Al Reese

Gas
Higher Taxes on Texas Gas Not Advisable.....May 76
FPC Policies Curtail Gas Supplies.....July 71
L. J. Logan
Oil and Gas Stand Side by Side.....Aug. 1 68
Paul Kayser
How to Determine Sites for Underground Storage.....Oct. 102
Harold S. Thomas

General
What's Ahead in '53?.....Jan. 59
How to Present Property Appraisal Data.....Jan. 68
R. I. Bradley
Compensation Laws Under Fire.....Feb. 1 55
Al Reese
How to Reduce Lease Operating Expenses.....Feb. 1 60
Roger C. Filson
Global Oil and Trouble Grow Together (Part 2).....Feb. 1 239
Dr. Cornelius Zondag
Competition Is Becoming Stiffer.....Feb. 1 66
L. J. Logan
Oil Vs. Politics.....Feb. 1 67
Max W. Ball
Legislative Outlook Is Favorable to Industry.....Feb. 15 88
L. Dan Jones
I Saw American Enterprise and Oil Helping Build a Nation.....March 242
Jenkin Lloyd Jones
Steel for Oil to Be Sufficient.....Feb. 15 77
Sinews of Industry.....April 52
Robert G. Dunlop
If 'The Bomb' Strikes . . . Tulsa Plant Is Ready.....May 78
Roger V. Devlin
What the Company Reports Show.....May 86
L. J. Logan
Osage County, Okla.....June 247
Clarence F. Mantooth
Camp Life Is Fun.....July 241
Don Kliewer
Nottinghamshire County, England.....Aug. 1 230
J. Cummings
Who Produces World's Oil.....Aug. 15 92
Private Capital on Road to Getting 'Fair Shake' Abroad.....Aug. 15 85
Gordon H. Barrows
What the Operator Wants From a Drilling Contractor....Sept. 80
A. E. Chester
Contract Drilling Highly Competitive.....Sept. 78
Warren L. Baker
Permian Basin Has 12 Percent of U. S. Rigs.....Oct. 155
Sumatra . . . A Synonym for Serenity.....Sept. 265
Production Is High in the Permian Basin.....Oct. 129
L. J. Logan
Vast Pipe Line Network Serves the Permian Basin.....Oct. 154
Cecil W. Smith
New Mexico Drilling Still Active.....Oct. 156
Keith Anderson
What's the Oil Industry Afraid of?.....Dec. 62

Investment
Oil to Be $44 Billion Industry This Year.....Aug. 1 58
L. J. Logan
Management Important in Securing Loans.....Dec. 64
Eugene McElvaney

Middle East—Also See International News, Features and Statistical Articles
Will the Growth of Middle East Oil Revive International Compact Talk?.....Feb. 15 80
Ray L. Dudley and Robert E. Spann
State Department, 5 U. S. Firms Discussing Iranian Settlement.....Feb. 15 85
Iran Supplies Some Answers.....June 72
Middle East Prices Up . . . Why?.....Aug. 1 62
Robert E. Spann
New Problems Arise in Iran.....Oct. 94
Robert E. Spann
Watch the Middle East.....Nov. 70
Robert E. Spann

Offshore
Offshore Development to Be Speeded Up.....June 53
L. J. Logan
When the Big Winds Blow.....June 48
Al Reese and Robert E. Spann
More Progress Made Toward Offshore Oil Development...July 79

Taxes
You Can Save Money on Taxes.....Jan. 64
H. O. Reyburn
Income Tax Encourages Oil Payments.....March 55
E. Earle Tomlins
Higher Taxes on Texas Gas Are Not Advisable.....May 76

NEWS ANALYSIS

Agriculture
The Farmers' Problems Are Oil Industry Problems, Too...Dec. 76

Atomic Power
Up and Atom (Industrial Applications of Atomic Power).Dec. 89

Brazil
What the New Petrobras Law Means to Brazilian Oil Industry.....Nov. 88

California
PAD Told of California Needs.....Jan. 52

Cartel Charge
'Cartel' and Tidelands Issues High on Eisenhower Agenda.Feb. 46
Government Drops Criminal Charges in Oil Cartel Suit....May 104

Coal
Is the Skidding Coal Industry a Victim of Economic Forces?.....Oct. 121

Demand
Seasonally Lower Demand Requires a Cutback in Operations.....March 144
Allowable Reflects Demand Increase.....June 70

Economics
Profit Problem.....Feb. 46
Petroleum Industry Looking Forward to Early Return of Competitive System.....April 46

Federal Power Commission
Oil Industry Cheers Administration Changes in the FPC..Sept. 101

Imports
Miners Join Plea to Curtail Oil Imports.....March 46
IPAA Urges U. S. to Curb Imports.....April 48
It Looks As if the Import Problem Will Be With Us for Another Year.....June 68

International Petroleum Exposition
Oklahoma Governor Plugs the IPE.....Jan. 48

Iran
Iran Finds Two Buyers for its Oil.....July 90
Iranians Are Finding the Price Was High.....Nov. 86

Labor
It's Contract Time Again for OWIU.....April 46
Wages Jumped.....Aug. 1 88

Laws
Extension of Trade Act Indicated.....July 90
Need for Stronger Conservation Laws in Western States Cited.....Aug. 1 88

Leasing
Attractive Lease Regulations Urged.....Dec. 89

Natural Gas
Moves Begun to Limit Natural Gas Output to Market Demand.....Feb. 44
Natural Gas Lid Off.....March 44
Row Over Gas Gathering Tax May Reach Supreme Court.March 46
Next Move Is Up to Gas Companies.....June 68
Bright Future Painted for Natural Gas.....Nov. 88

Pipe Lines
Line Would Aid Canada Producers.....Jan. 52
New Pipe Line to Solve Gas Waste Problem in the Spraberry Field.....June 70
Pipe Lines Reflect Growing Demand.....Aug. 1 84
Spraberry to Get Needed Pipe Lines.....Sept. 100
Army on Line (Alaska Pipe Line).....Sept. 104
LPG Pipe Line Expansion Forecast.....Dec. 86

Prices
'Shortage Hinges on Price Relief'.....Jan. 52
Price Inquiry?.....Feb. 44
Prices React to Potential Surpluses.....May 104
Prices Mostly Steady After Lid Lifted.....March 48
Raise Puts Crude Postings Above Levels of Price Control Period.....July 88
Oil Executives Put Price Case Before Congressional Committee.....Aug. 1 84
Petroleum Market Stable, Heating Oil Resists Price Increase.....Aug. 1 86
Markets Jumpy After Price Increase.....Sept. 103
U. S. Markets Shaky, Concern Over Crude Prices Indicated.Oct. 120
Why Prices Cut.....Nov. 86

NEWS ANALYSIS—Continued

Proration
Allowables Are Cut Again in Texas....April 48
Spraberry Ruling Hits a Legal Snag in Texas Supreme Court....July 92

Production Techniques
Higher Spraberry Recovery Promised (Through "Water Imbibition" Method)....Jan. 50

Public Relations
Oil Is at Your Service, America (Oil Progress Week Observance)....Oct. 122
Leach Calls for a Unified Front Within the Oil Industry...Nov. 86

Refining
Refining Capacity Is Keeping Pace....Jan. 52
European Refineries Watched Closely....Aug. 1 88

Rocky Mountains
Rocky Mountain Finds Customer (Markets Expand)....June 70

Safety
Safety Pays Off for Canadian Drillers....July 92

Statistics
Producers in U. S. Now Exceed 12,000 (Also Number of Refiners, etc. Given)....Jan. 50

Steel
Tubular Goods Still in Strong Demand....March 44

Storage
Oil Storage Needs Estimated....Jan. 50

Taxes
Plan Would Hike Tax on Tank Trucks....Feb. 44
Depletion Allowance Under Fire Again....Sept. 104

Tidelands
'Cartel' and Tidelands Issues High on Eisenhower Agenda.Feb. 46
Tidelands Squabble Near Early Showdown....March 48
Tidelands Issue Still Up in the Air....April 48
Tideland Exploration Is Becalmed....Aug. 1 86
Legal Barriers Are Still Holding Up Offshore Exploration.Sept. 106
California to Resume Offshore Well....Dec. 89

Transportation
Transportation Given a Hand for Industry Contributions..Dec. 86

Uranium
Oil Industry Will Aid in U. S. Search for Uranium....Jan. 48

INTERNATIONAL NEWS, FEATURE AND STATISTICAL ARTICLES

Africa
Other Africa....Aug. 15 227

Alaska
Operation Alaska....Jan. 239
Capt. R. H. Meade, USN
Search for Oil Pushed in the Land of Icebergs....April 290
Alaska....Aug. 15 132

Albania
Albania....Aug. 15 176

Algeria
Algeria....Aug. 15 218

Argentina
Is Argentina Calling for Private Capital?....May 80
Argentina....Aug. 15 142

Australia
Australia Is Beating the Bushes for Oil....April 282
J. Lloyd Marshall
Australia....Aug. 15 216

Austria
Austrian Oil a Victim of Tensions....Jan. 242
G. G. Rosu
Austria....Aug. 15 172

Bahrain
Saudi Arabia and Bahrain....Aug. 15 192

Bolivia
Bolivia....Aug. 15 144

Borneo, British and Indonesia
Indonesia and British Borneo....Aug. 15 203

Brazil
Brazil....Aug. 15 150

Burma
Burma....Aug. 15 200

Canada
Tests Prove Discovery at Sturgeon Lake....Feb. 1 246
Gilbert M. Wilson
Socony-Vacuum Is Considering Fosterton-Regina Pipe Line....Feb. 1 259
Efficiency Curbs Canadian Drilling Costs....Feb. 15 286
Ralph L. Binning and B. H. Corey
Br-r-r-rother, It's Cold Outside!....April 286
James Joseph
Canadian D3 Play Is Developing Fast....May 286
Gilbert Wilson
Canada Clamps Down on Export of Gas to Meet Needs at Home....May 294
New Canadian Map Shows Trail's End....Oct. 331
Bob Shiels
Canadian Tankers Are Still Busy....Nov. 278
Harry Chapin Plummer
Drilling Operations Continue the Year Round in Canada...May 160
Vern H. Hunter
Canada....Aug. 15 108
Gilbert M. Wilson
1953 a Fruitful Year for Canada....Dec. 253
Gilbert M. Wilson
New Grid System Drafter to Speed Up Exploration....Dec. 262
Dr. Arthur B. Irwin
When the Ice Cometh, Man!....Dec. 268
Will Saskatchewan Discover Its Own Leduc?....Dec. 270
F. H. Edmunds
'Weathered-In' Lease Problem Being Whipped....Dec. 276
M. R. Taylor
Lower Cretaceous in Alberta and Saskatchewan....Dec. 282
A. W. Farmilo

Central America
Central America....Aug. 15 132

Ceram-Netherlands New Guinea
Ceram-Netherlands New Guinea....Aug. 15 212

Chile
Chile....Aug. 15 144

Colombia
Colombia....Aug. 15 148

Cuba
Cuban Exploration Travels South....June 241
Albert Ruschil de la Roche
Cuba....Aug. 15 136

Czechoslovakia
Czechoslovakia....Aug. 15 176

Denmark
Denmark....Aug. 15 176

East Germany
East Germany....Aug. 15 178

Ecuador
Ecuador....Aug. 15 150

Egypt
Egypt....Aug. 15 227

Europe
Western Europe Opens Arms to Private U. S. Investments....Feb. 1 242

France
France....Aug. 15 166

Germany
Germany....Aug. 15 160

Great Britain
Great Britain....Aug. 15 172

Hungary
Hungary....Aug. 15 178

India
India....Aug. 15 200

Indonesia
Indonesia and British Borneo....Aug. 15 261

Iran
Iran Supplies Some Answers....June 72
New Problems Arise in Iran....Oct. 94
Robert E. Spann
Iran....Aug. 15 198
State Department, 5 U. S. Firms Discussing Iranian Settlement....Feb. 15 85

Iraq
Iraq....Aug. 15 182

INTERNATIONAL NEWS, FEATURE AND STATISTICAL ARTICLES—Continued

Israel
Israel ..... Aug. 15 228

Italy
Genoa Gains Stature as Transit Center ..... Jan. 258
Italy ..... Aug. 15 174

Japan
Japan ..... Aug. 15 214

Kuwait
Point IV Program . . . The Private Capital Way ..... Sept. 270
Kuwait ..... Aug. 15 187

Mexico
Mexico ..... Aug. 15 126

Middle East
Middle East Oil Monopoly Said to Be Up to Russia ..... Feb. 1 258
Will the Growth of Middle East Oil Revive International Compact Talk? ..... Feb. 15 80
Ray L. Dudley and Robert E. Spann
Middle East Prices Up . . . Why? ..... Aug. 1 62
Robert E. Spann
Watch the Middle East ..... Nov. 70
Robert E. Spann

Morocco
Morocco—A Country on the Threshold of Greater Wealth. Feb. 1 235
Dr. J. Brian Eby

Netherlands, The
The Netherlands ..... Aug. 15 170

Netherlands New Guinea
Ceram-Netherlands New Guinea ..... Aug. 15 212

Neutral Zone
The Big Payoff ..... Aug. 1 229
Neutral Zone ..... Aug. 15 189

New Zealand
New Zealand ..... Aug. 15 216

Pakistan
Pakistan ..... Aug. 15 200

Persia (See Iran)

Peru
Peru Perks Up
(Part 1) ..... April 275
(Part 2) ..... May 288
Dr. Juan E. Rassmuss
This Is Talara ..... May 281
Nature Makes it Tough ..... Sept. 272
Dr. J. E. Rassmuss
Peru . . . Modern-Day Trail Blazer ..... Nov. 275
Dr. Cornelius H. Zondag
Peru ..... Aug. 15 153

Philippines
Philippines ..... Aug. 15 216

Poland
Poland ..... Aug. 15 178

Qatar
Qatar ..... Aug. 15 198

Roumania
They Paid the Communists' Price . . . Here's Why ..... Aug. 1 234
Roumania ..... Aug. 15 178

Saudi Arabia
They're Overcoming Drilling Problems in Saudi Arabia. Aug. 1 146
L. C. Carson
90 Miles an Hour Across the Desert ..... Nov. 284
Saudi Arabia and Bahrain ..... Aug. 15 192

Sicily
Sicily ..... Aug. 15 228

Sumatra
Sumatra ..... Aug. 15 204

Sweden
Swedish Underground Storage Method Proves Successful. March 240

Taiwan
Why Is Taiwan Drawing Interest? ..... Dec. 66

Trinidad
Trinidad ..... Aug. 15 136

Tunisia
Oil in the Olive Orchard? ..... July 247
Tunisia ..... Aug. 15 218

Turkey
The Door's Open in Turkey ..... March 233
Cevat E. Tasman
Turkey ..... Aug. 15 198

U.S.S.R.
Can Russia Produce 600 Million Barrels of Oil Annually by 1955? ..... March 236
M. N. Jurin
What Are Russia's Tidelands Worth? ..... Nov. 77
Russia and Satellites ..... Aug. 15 176

Venezuela
Giant Venezuela Pressure Maintenance Program Planned. April 278
I Saw American Enterprise and Oil Helping Build a Nation ..... March 242
Jenkin Lloyd Jones
Private Capital Oil Companies Help a Nation ..... Aug. 15 157
Venezuela ..... Aug. 15 157

Yugoslavia
Yugoslavia ..... Aug. 15 174

World
Global Oil and Trouble Grow Together ..... Jan. 237
Dr. Cornelius H. Zondag
World Supply and Demand Increases 4.8 Percent ..... Feb. 15 261
World Crude Reserves Increase 13.5 Billion Barrels ..... Feb. 15 264
World Crude Production Continues Steady Climb ..... Feb. 15 266
PAD's Foreign Program Calls for Expanded Activity ..... Feb. 15 278
J. E. Brantly
Will the Growth of Middle East Oil Revive International Compact Talk? ..... Feb. 15 80
Ray L. Dudley and Robert E. Spann
World Supply and Demand ..... Aug. 15 59
Robert E. Spann
World Completions and Footage ..... Aug. 15 61
Al Reese
World Crude Production ..... Aug. 15 63
World Crude Reserves ..... Aug. 15 76
Don Kliewer
World Producing Wells ..... Aug. 15 78
World Refining ..... Aug. 15 80
Who Produces World's Oil? ..... Aug. 15 92
Private Capital on Road to Getting 'Fair Shake' Abroad ..... Aug. 15 86
Gordon H. Barrows
State Department, 5 U. S. Firms Discussing Iranian Settlement ..... Feb. 15 85

PIPE LINE ARTICLES

Business Machines
Here's How Machines Measure Gas Volumes ..... March 206-A
W. F. Naeher and Harold G. Morris
How Machines Measure Gas Volumes (Part 2) ..... April 264-E
W. F. Naeher and Harold G. Morris
Network Computations Solved 8 Times as Fast ..... Nov. 238
Price D. Wickersham

Communications
El Paso Natural Completes a Circle of Communication ..... Jan. 203
B. Malshall Willis

Compressor Stations
Pressurized Air Cooling Eliminates Dividing Wall ..... Jan. 202-D
How a Free-Piston Engine Works ..... July 220-A
Comdr. J. J. McMullen and Robert P. Ramsey
How to Suppress Air-Borne Pulsations ..... Aug. 1 210-F
W. N. Linblad
New Developments in Compressor Equipment ..... Oct. 304-A
B. T. Mast
Pre-Running Ignition System ..... Nov. 222-K
Leonard C. Pazderny
Specific Heat Data and the Natural Gas Compressor Plant ..... Nov. 222-L
Robert W. Brooks
Save $20 per HP on Station Costs ..... Nov. 230
Donald M. Taylor

Construction Activities
The Trans Mountain Pipe Line . . . 711 Miles and 3000 Contracts ..... Jan. 202-F
New Code for Gas System Piping Is on the Way ..... Jan. 210
Donald M. Taylor
Trans Mountain Plans Extension into U. S. ..... Jan. 222
Fort Worth System Is Planned ..... Jan. 224
Aramco Lays New 12-inch Pipe Line in Persian Gulf ..... Jan. 234-E
U. S. Pipe Lines to Have 13,910 Added Miles ..... Feb. 1 235
Donald M. Taylor
Crude, Products and Gas Lines Planned in 1953 ..... Feb. 15 238
Alice L. Given
Service Pipe Line Completes 'Big Inch' Expansion Program ..... March 210
North America's Largest Crude Oil Line Is Now in Operation ..... May 256
The U. S.'s Most Powerful Crude Oil Line Pump Station ..... May 258
Sinclair's Big-Inch Line on Stream ..... June 214-H
Anthony Gibbon
Permian Basin to Get Important Gas Outlet ..... Oct. 305
Bids on Alaskan Line Open ..... Oct. 316

Construction Methods—also see Underwater Construction

Efficiency Keynotes Takeup Job.....Feb. 1 232-D
Philip L. McLaughlin
Well Points Whip Quicksand.....March 206-D
J. M. Steele
The Rock Spread.....April 248-A
Don Taylor
This Makes Pipe Cleaning Easier.....May 254-A
Carl I. Huss
Sinclair's Big-Inch Line on Stream.....June 214-H
Anthony Gibbon
How to Choose a Pig.....June 232-I
T. D. Williamson, Jr.
How the World's Deepest Submarine Line Was Laid.....Sept. 246-H
Donald M. Taylor
How they Crossed the Straights of Mackinac.....Oct. 304-H
Don Taylor
Permian Basin to Get Important Gas Outlet.....Oct. 305
Maintenance Truck Saves Money on Spread.....Nov. 222-X
Southern Natural Passes the Billion Mark.....Nov. 223
Darndest Pipe Line Ever Constructed.....Dec. 226
Donald M. Taylor
How They Pulled Seven Lines at Once Across a 2500-Foot Wide Channel.....Dec. 224-F
Donald M. Taylor

Contracts

The Trans Mountain Pipe Line . . . 711 Miles and 3000 Contracts .....Jan. 202-F

Controls—See Instrumentation

Corrosion

Pipe Line Corrosion and Cathodic Protection
Marshall E. Parker
Part 1—Soil Resistivity Surveys.....Feb. 210
Part 2—Potential Surveys .....March 222-J
Part 3—Line Currents .....April 248-F
Part 4—Current Requirement Surveys.....May 270-H
Part 5—Rectifier System for Coated Lines.....June 232-F
Part 6—Ground Bed Design and Installation.....July 220-O
Part 7—Magnesium Anodes on Coated Lines.....Aug. 1 210-J
Part 8—Hot Spot Protection with Magnesium Anodes.Sept. 246-S
Part 9—Stray Current Electrolysis.....Oct. 304-T
Part 10—Interference in Cathodic Protection Systems..Nov. 222-T
Part 11—Operation and Maintenance of Cathodic Protection Systems .....Dec. 224-S
How Dehydrators Fight Internal Pipe Corrosion.....April 248-H
R. P. Dougherty
Here's a New Development in Corrosion Protection.....June 232-B
Roy C. Jorgensen and Burke Douglas
Using Ultrasound to Find Internal Pipe Corrosion.....Aug. 1 210-R
Donald C. Erdman and S. K. Gally

Dehydration

How Dehydrators Fight Internal Pipe Corrosion.....April 248-H
R. P. Dougherty
Mobile Units Now Being Used for Dehydration Plant Repairs .....May 255

Design—also see Compressor Stations, Pump Stations, etc.

New Code for Gas System Piping Is on the Way.....Jan. 210
Donald M. Taylor
Progress in Products Pipe Lines.....Feb. 1 201
S. S. Smith
How Flanges Work and Why They Leak.....March 222-A
Robert G. Blick
Applying Graphical Methods to Square Footing Designs...May 254-D
Charles H. Fork
This New Type Control Instrument.....June 214-A
S. S. Smith
Design of Rectangular Footings.....June 214-F
Charles H. Fork
What Is "NPSH"?.....Aug. 1 210-R
Dan R. Rankin
It's Easy to Determine NPSH.....Sept. 246-L
Dan R. Rankin
New Developments in Compressor Equipment..... .....Oct. 304-A
B. T. Mast
Evangeline System Has Outstanding Features.....Nov. 222-G
Specific Heat Data and the Natural Gas Compressor Plant.Nov. 222-L
Robert W. Brooks
Network Computations Solved 8 Times as Fast.....Nov. 238
Price D. Wickersham
Buckeye System Designed for Easy Expansion.....Nov. 246
Donald R. Merriman
Electric Wires in Pipe Coating Prevent Line Freeze-Up...Dec. 224-V
Interprovincial Solves Cold Weather Problems.....Dec. 224-K
H. LeM. Stevens Guille
Gas Jet Compressors.....Dec. 224-A
George F. Fletcher

Electrical Maintenance

Pressurized Air Cooling Eliminates Dividing Wall.....Jan. 202-D
Surge Protection of Motors.....Feb. 1 200-A
B. M. Kleinman
How to Maintain Electrical Equipment.....July 221
H. R. Meyer
Here's How to Check Motor Trouble.....Aug. 1 210-A
L. J. Cormack

Engines

How a Free-Piston Engine Works.....July 220-A
Comdr. J. J. McMullen and Robert P. Ramsey
Absorption Unit Cools Air Intake.....Oct. 304-N
Robt. C. Coblentz
Pre-Running Ignition System.....Nov. 222-K
Leonard C. Pazderny

Evaporation

Reduce Evaporation Losses 80 to 90 Percent.....Aug. 1 211

Fire Control

They Fight Their Neighbors' Fires.....Oct. 304-E
Al Reese
How to Control Storage Tank Fires.....Feb. 1 232-A
J. H. Burgoyne

Flow

Specific Heat Data and the Natural Gas Compressor Plant.Nov. 222-L
Robert W. Brooks

Gas Analysis

You Can Analyze Gas in the Field.....Sept. 247
Myron L. Robinson

Gas Fired Turbines

How Are Gas Turbines Doing?.....Nov. 222-A
W. V. Holik
How Are Gas Turbines Doing?.....Nov. 222-C
J. W. Blake
How Are Gas Turbines Doing?.....Nov. 222-D
E. G. Stepp
How Are Gas Turbines Doing?.....Nov. 222-E
G. Carl Cooper

General

The Organization Chart vs. Loyalty and High Morale.....Jan. 234-B
H. H. Anderson
How Flanges Work and Why They Leak.....March 222-A
Robert G. Blick
Make Weather Work for You.....July 220-T
Edgar R. Hichens

Instrumentation

Progress in Products Pipe Lines.....Feb. 1 201
S. S. Smith
Automatic Pump Station Eliminates Looping Need.....March 222-H
Bob Shiels
Automatic Shutdown Device Developed for Main Line Block Valves.....May 254-J
Gene Proper
Radioactive Controls Pay Off.....May 270-D
D. E. Hull and B. E. Fries
This New Type Control Instrument.....June 214-A
S. S. Smith
This New Flowmeter Measures True Mass-Rate.....June 215
Y. T. Li and P. A. Lapp
Using Ultrasound to Find Internal Pipe Corrosion.....Aug. 1 210-R
Donald C. Erdman and S. K. Gally
Locating Holidays Underground Is Easier.....Aug. 1 210-U
New Electronic Control System.....Sept. 246-V
Curtis H. Scruggs
You Can Analyze Gas in the Field.....Sept. 247
Myron L. Robinson
Evangeline System Has Outstanding Features.....Nov. 222-G
How Electric Valve Operators Work.....Nov. 222-R
E. Conway Thompson
Save $20 per HP on Station Costs.....Nov. 230
Donald M. Taylor
TGT Delivers Gas by Remote Control.....Dec. 224-N
E. S. Plank and T. K. Davis

Loading

Barge Loading Made Easier.....Sept. 246-X

Maintenance—see Pipe Line Maintenance, Pump Stations, Compressor Stations

Maps

Shell Pipe Lines Crisscross Seven States.....Jan. 216
Humble's Pipe Line Network Serves Texas and New Mexico .....Feb. 1 214
Service Pipe Line Completes 'Big Inch' Expansion.....March 210
Texas Gas Is Still Growing.....April 252
United Gas System Serves "The Gulf South".....May 264
Buckeye Pipe Line Company—67 Years Old and Still Growing .....June 220
Northern Natural Gas Company.....July 224
Columbia in 7th Year of Expansion Program.....Aug. 1 215
TET Turns 'Big Inch' Into a Big Operation.....Sept. 251
Southern Natural Passes the Billion Mark.....Nov. 223
From 40 Miles in 1886 . . . To 1183 Miles Today.....Dec. 230
Donald M. Taylor

Measurement

Progress in Products Pipe Lines.....Feb. 1 201
S. S. Smith
This New Flowmeter Measures True Mass-Rate.....June 215
Y. T. Li and P. A. Lapp
You Can Analyze Gas in the Field.....Sept. 247
Myron L. Robinson

Office Procedure

Here's How Machines Measure Gas Volumes
(Part 1) .....March 206-A
(Part 2) .....April 264-E
W. F. Naeher and Harold G. Morris
How a Pictorial Index Can Save You Time.....Dec. 225
B. G. Sauthoff

Personnel Handling

The Organization Chart vs. Loyalty and High Morale.....Jan. 234-B
H. H. Anderson
Time Out for Training.....July 220-K

PIPE LINE ARTICLES—Continued

Pipe Line Construction—see Construction Activities and Construction Methods

Pipe Line Maintenance and Operation

Pressure Testing Lines with Oil.....Feb. 1 200-F
Carl I. Huss
This Makes Pipe Cleaning Easier.....May 254-A
Carl I. Huss
How to Choose a Pig.....June 232-I
T. D. Williamson, Jr.
Make Weather Work for You.....July 220-T
Edgar R. Hichens
Locating Holidays Underground Is Easier.....Aug. 1 210-U
Transco Uses Jets to Lower Hudson Crossing 15-20 Feet..Sept. 246-A
I. W. Dods
How to Plan a Brush Control Program.....Sept. 246-P
John H. Burke

Pipe Line Personalities

Pipe Line Portrait—H. H. Anderson.....Jan. 218
Al Reese
Pipe Line Portrait—W. C. Kinsolving.....Feb. 1 224
Pipe Line Portrait—Roy J. Tibbets.....March 206-L
Pipe Line Portrait—Ralph B. McLaughlin.....April 264-A
Al Reese
Pipe Line Portrait—Harold C. Price.....June 214-K
Pipe Line Portrait—S. S. Smith.....Sept. 246-F

Public Relations

The Organization Chart vs. Loyalty and High Morale.....Jan. 234-B
H. H. Anderson
The Landowner—Enemy or Friend?.....March 206-J
Charles A. Lingo

Pulsations

How to Suppress Air-Borne Pulsations.....Aug. 1 210-F
W. N. Linblad

Pump Stations

Progress in Products Pipe Lines.....Feb. 1 201
S. S. Smith
How Flanges Work and Why They Leak.....March 222-A
Robert G. Blick
Automatic Pump Station Eliminates Looping Need.....March 222-H
Bob Shiels
How Mechanical Agitators Rid Tanks of Sediment.....July 220-H
J. H. Halpine
The U. S.'s Most Powerful Crude Oil Line Pump Station..May 258
How to Maintain Electrical Equipment.....July 221
H. R. Meyer
Here's How to Check Motor Trouble.....Aug. 1 210-A
L. J. Cormack
What Is "NPSH"?.....Aug. 1 210-N
Dan R. Rankin
It's Easy to Determine NPSH.....Sept. 246-L
Dan R. Rankin
Evangeline System Has Outstanding Features.....Nov. 222-G

Radio and Electronics

El Paso Natural Completes a Circle of Communication....Jan. 203
B. Marshall Willis
New Electronic Control System.....Sept. 246-V
Curtis H. Scruggs

Reclaiming Pipe and Fittings

Efficiency Keynotes Takeup Job.....Feb. 1 232-D
Philip L. McLaughlin

Right-of-Way

The Landowner—Enemy or Friend?.....March 206-J
Charles A. Lingo
How to Plan a Brush Control Program.....Sept. 246-P
John H. Burke

River Crossings—see Underwater Construction

Rules of Thumb

Corrosion Protection

1. What Spacing for Test Leads to Measure Current on a Pipe Line?.....Dec. 261
2. How Can the Life of Magnesium Anodes Be Predicted?.....Jan. 234-A
3. How Can Output of Magnesium Anodes Be Predicted?.....Feb. 1 216
4. What Will Be the Resistance to Earth of a Group of Graphite Anodes, in Terms of the Resistance of a Single Anode?.....April 249
5. How to Estimate the Monthly Power Bill for a Cathodic Protection Rectifier.....April 249
6. What Will Be the Resistance to Earth of a Single Graphite Anode?.....May 271
7. How Can the Current Output of Magnesium Rod Used for the Cathodic Protection of Heat Exchanger Shells Be Predicted?.....June 225

Engineering Design

1. How to Find Pipe Weight from Outside Diameter and Wall Thickness.....Dec. 261
2. How Do You Estimate Compressor Station Fuel Needs?.....Feb. 1 216
3. What Is the Hydrostatic Pressure Due to a Column of Oil H Feet in Height?.....March 207
4. Find the Stress in Wall of Pipe Due to Internal Pressure.....March 207
5. How Much Pipe Length Is Lost in Making up Screwed Joints?.....June 225
6. How to Determine the Buoyancy of Bare Steel Pipe.....June 225
7. How to Determine the Crop Acreage Included in a Right-of-Way Strip.....July 220-G
8. How to Find the Cacapity of Reciprocating Pump.....Aug. 1 210-E
9. A Practical Way to Calculate Gas Flow for Pipe Lines.....Nov. 244
10. A Quick Way to Determine Size of Gas Gathering Lines.....Dec. 224-J
11. How to Size Electric Motors for Crude Gathering System Pumps.....Dec. 224-J

Pipe Line Construction

1. How Much Coal-Tar Enamel for a Mile of Pipe Line?.....Dec. 261
2. How Much Primer for a Mile of Pipe?.....Jan. 234-A
3. How Much Wrapping for a Mile of Pipe Line?....Jan. 234-A
4. How to Identify the Schedule Number of Pipe by Direct Measurement.....May 271
5. How Many Cubic Yards of Excavation in a Mile of Ditch?.....July 220-G
6. How Much Welding Rod Is Required for a Mile of Schedule 40 Pipe Line?.....Aug. 1 210-E
7. What Is the Cost of Asbestos Felt for a Mile of Pipe?.....Sept. 253
8. How Deep Should Telephone and Powerline Poles Be Set in Ground?.....Oct. 304-S

Miscellaneous

1. What Is the Linefill of a Given Pipe in Barrels per Mile?.....Jan. 234-A
2. How Fast Does Oil Move in a Pipe Line?.....Feb. 1 216
3. How to Gauge a Horizontal Cylindrical Tank....March 207
4. How Much Gas Is Contained in a Given Line Section?.....April 249
5. Volume of Liquid in Vertical Cylindrical Tanks....May 271
6. How Can the Approximate Throughput Capacity of a Pipe Line Be Estimated from the Pipe Size Alone?.....July 220-G
7. How to Determine the Size Wrench Needed for Pipe Flange Stud Bolts.....Aug. 1 210-E
8. How to Find the Resistance and Weight of Copper Wires.....Sept. 253
9. How to Identify the Series Number of Flanged Fittings.....Oct. 304-S
10. How to Determine the Length of a V-Belt.....Oct. 304-S

Safety

You're Safer . . . On the Job!.....Jan. 202-A
Cecil L. Hightower
New Code for Gas System Piping Is on the Way.....Jan. 210
Donald M. Taylor
Pressure Testing Lines with Oil.....Feb. 1 200-F
Carl I. Huss
How to Control Storage Tank Fires.....Feb. 1 232-A
J. H. Burgoyne
Automatic Shutdown Device Developed for Main Line Block Valves.....May 254-J
Gene Proper
Pipeliner Frogmen . . . Safe from Sharks.....July 220-R
They Fight Their Neighbors' Fires.....Oct. 304-E
Al Reese

Station Construction—see Compressor Stations and Pump Station

Storage

How to Control Storage Tank Fires.....Feb. 1 232-A
J. H. Burgoyne
How to Find a Field for Underground Natural Gas Storage.....April 264-B
Henry P. Wheeler, Jr. and William E. Eckard
How Mechanical Agitators Rid Tanks of Sediment.....July 220-H
J. H. Halpine
Reduce Evaporation Losses 80 to 90 Percent.....Aug. 1 211

Underwater Construction

Aramco Lays New 12-inch Pipe Line in Persion Gulf.....Jan. 234-E
The Rock Spread.....April 248-A
Don Taylor
Pipeliner Frogmen . . . Safe from Sharks.....July 220-R
Transco Uses Jets to Lower Hudson Crossing 15-20 Feet.Sept. 246-A
I. W. Dods
How the World's Deepest Submarine Line Was Laid.....Sept. 246-H
Donald M. Taylor
How They Crossed the Straits of Mackinac.....Oct. 304-H
Don Taylor
Southern Natural Passes the Billion Mark.....Nov. 223
How They Pulled Seven Lines at Once Across a 2500-Foot Wide Channel.....Dec. 224-F
Donald M. Taylor

PIPE LINE HINTS

Engine Trouble Can Be Reduced....Jan. 230
Chemical Treater Is Made of Scrap....Jan. 230
Field Forces Can Build Simple Light Standard....Jan. 231
Long-Handled Mirror Aids Weld Inspection....Jan. 231
Painter Can Keep This Air Tank Handy to Job....Jan. 232
Pipe Heater Has Multitude of Uses....Jan. 233
Repair Shop on Wheels Eases Yard Maintenance....Jan. 234
Ramp Helps in Racking Pipe in Storage Yard....Feb. 1 227
Chute Speeds Grading of Pipe....Feb. 1 227
Casters Provide Portable Bench....Feb. 1 228
How to Reduce Products Loss....Feb. 1 228
Seal Protects Field Joints....Feb. 1 230
Rails Mounted in Pipe Sleeves....Feb. 1 232
Revolving Gate Made of Scrap....Feb. 1 232
Furnace Relieves Welding Stresses....Feb. 15 252
Auxiliary Air Supply for Controls....Feb. 15 252
Storage Reel Made of Pipe....Feb. 15 252
Jet Pump Disposes of Undrained Water....Feb. 15 254
Rock Shield Protects Pipe Coating....Feb. 15 256
Scraper Tanks Are Easy to Clean....Feb. 15 256
Simple Installation Provides Lab Samples....Feb. 15 257
Potentials Read by Fixed Installations....Feb. 15 257
Split Sleeves Cached on Route for Emergencies....March 226
Device Reports Light Failure....March 226
Solenoid Valve Switches Fuel....March 227
Warehouse Stove Moves on Casters....March 228
Self Aligning Handle is Made with U-Joint....March 229
Small Lines Trough Eliminates Hazard....March 229
Pipe Clamps Minimize Construction Stress....March 230
'Horses' Feed Pipes into Saws....March 230
Barrel Sling Makes Filling Easy....April 268
Lever Device Lifts Pipe Simply....April 268
Sign Board Made of Casing Vent....April 268
Metal Cover Protects Electrical Equipment....April 270
Doorstops Lessen Hazards of Ladder....April 270
Cradle Device Aids Pipe Handling....April 272
Racking Drums Aids Handling....May 274
Textile Gauze Aids Engine Break-in....May 274
Rollers Relieve Stress on Bents....May 274
Grinder on Wheels is Easy to Move....May 276
Dispenser Keeps Oil Free of Dust....May 276
Adjustable Tripod Holds Pipe Steady....May 276
Hydrant Effective in Warm Climates....May 278
Guy Wire Shields a Safety Measure....May 278
Making a Multiple Pipe Line Crossing Over River....July 232
Making Pipe Stool....July 234
Building Walkway....July 234
Holding Tools on Truck....July 237
Racking Wrenches....Aug. 1 222
Storing Equipment....Aug. 1 222
Forcing Pig in Place With Jack....Aug. 1 222
Finishing Ditch....Aug. 1 224
Carrying Tools on Cart....Aug. 1 224
Wrapping and Laying Pipe in Ditch....Aug. 1 226
Making Utility Welder's Truck Handy....Sept. 260
Racking Oxygen Bottles....Sept. 260
Aiding Fabrication of Pipe....Sept. 261
Saving Truck Tractors from Wear....Sept. 261
Cooling Boat Engine....Sept. 261
Identifying Trucks....Sept. 261
Handling Drums....Sept. 262
Storing Rods and Bars....Sept. 262
Mounting Hot-Pass Trailer on Tracks....Oct. 318
Draining Liquid from Surge Chamber....Oct. 318
Closing Gate Valves....Oct. 318
Diverting Troublesome Stream....Oct. 320
Lifting Strainer....Oct. 320
Jetting Piling for Small Crossings....Nov. 264
Publicizing Slogans....Nov. 264
Keeping Station Clean....Nov. 264
Racking Equipment....Nov. 267
Keeping Engine Performance Data....Nov. 268
Handling Drums....Nov. 268
Locating Extinguishers....Nov. 270
Holding Shovels....Nov. 270
Speeding X-Ray on Crossing....Nov. 272
Keeping Welding Rods....Nov. 272
Making a Guard for a Pump Shaft....Dec. 246
Rolling River Clamps....Dec. 246
Carting Equipment....Dec. 246
Forming Packing Rings....Dec. 248
Protecting Water Leg on Separator....Dec. 248
Making a Hose Reel....Dec. 248
Racking Small Pipe....Dec. 250
Checking on Gauges....Dec. 250

PRODUCTION ARTICLES

Acidizing
Compressed Gas Cuts Carthage Acidizing Costs....Aug. 1 180
P. S. Clinkenbeard
Well Stimulation at North Cowden Pays....Oct. 264
J. E. Kastrop

Artificial Lift—Also see "Gas Lift" and "Pumping"
Artificial Lift Equipment for 21,342 Wells Is Forecast..Feb. 15 181
J. E. Kastrop

Bailing
Shop-Made Pump Aids Operators....Jan. 179

Casing
How to Identify Casing In Mixed Strings....April 144

Completion Practices
Dual Completion Takes Two Full Size Tubing Strings....Feb 1 162
Royal W. Reiss and J. E. Kastrop
Dual Completions Pay off in Illinois....March 163
Frank H. Hunter
Magnolia Makes an Unusual Completion in Wilcox....June 176
J. E. Kastrop
Triple Completion Takes Three Tubing Strings....Nov. 169
Royal W. Reiss

Corrosion
Don't Let Corrosion Eat Up Your Profits....Feb. 1 172
Dan H. Carpenter
Brine Corrosion of Steel Vessels....May 206
Cecil W. Smith
Little Bugs—Big Problems....Jnue 170
Dr. O. B. Williams
Oil Field Scale and Corrosion....June 191
E. N. Frisius
Field Tours Highlight West Texas NACE Meet....Sept. 201

Decline Curves
How to Select the Best Decline Curve....Dec. 180
D. E. Menzie

Engines
Vapor Phase Cooling Boosts Engine Efficiency....July 182
W. L. Giezentanner

Fracturing
New Multiple Fracturing Process....Jan. 159
George Howard and William G. Bearden
Fracturing Sandstones of the Illinois Basin....Aug. 1 192
F. D. Furber and J. C. Wilson

Gas Injection
Hydraulic System Drives Cooling Fans....Sept. 219
Conditioning Engine Exhaust Gases for Repressuring....Sept. 224
Dr. J. N. Breston

Gas Lift
New Correlation Simplifies Pressure Gradient Calculation in Tubing....June 161
Fred H. Poettmann and Paul G. Carpenter
Why Worry About Port Size in Gas Lift Valves?....Nov. 187
B. J. (Dusty) Rhoads, Jr.

Logging
Simultaneous Log of Radioactivity Curves Cuts Standby Time in Half....Jan. 122
Gilbert Swift and C. C. Roberts
Hole Diameter Influences Neutron Derived Porosity....Jan. 172
C. B. Scotty and E. F. Egan
Electrical Conduction in Fluid-Saturated Rocks....Feb. 1 113
Dr. B. F. Howell, Jr.
Electrical Conduction in Fluid-Saturated Rocks....March 142
Dr. B. F. Howell, Jr.
Guess Work is Removed in Flood Evaluations....May 216
N. J. Mellies and C. W. Clark

Materials Control
Materials Control Can Save You Money....Dec. 198
J. Tilman Ussery

Measurement and Testing
How to Solve Problems in Gas Measurements....Nov. 194
Dudley C. Penick
Electronics Speeds Gas Volume Calculations....March 186
A. C. Buchanan, Jr. and Hubert Skinner

Perforating
Four-Way Perforating Aids Squeeze Cementing....April 222
J. E. Kastrop

Piping
Portable Pipe Vise Speeds Threading and Cutting....Jan. 190

Producing Depths
Producing Depth Records Fall in Ten Areas....Feb. 15 204

Producing Rates
U. S. Crude Oil Production May Reach 2310 Million Barrels....Feb. 15 183
Natural Gasoline Output to Top 1952 High....Feb. 15 192
Natural Gas Production, Value Increase....Feb. 15 194
LPG Production, Sales to Rise....Feb. 15 212

Producing Wells
Producing Oil Wells Remain at Record Level....Feb. 15 208

Pumping
How to Pump Deep Dual Completions Alternately....Jan. 188
J. R. Hatfield
How to Select a Subsurface Pump Plunger to Fit the Job.May 224
Kenneth N. Mills
Interpretation of Dynamometer Cards....July 175
J. H. Russell, Jr.
Foundation Anchor Device Fits Many Sizes of Pumping Units....July 204
Proper Gas Control in Pumping Wells....Dec. 188
Kenneth N. Mills

Pumping Wells—See "Artificial Lift"

Research
'In Situ' Combustion....Nov. 184

PRODUCTION ARTICLES—Continued

Reservoir Engineering

New Method Estimates Gas Well Performance.....Jan. 180
Dr. David Cornell

Permeability Determined from Production Data.....Feb. 1 186
Dr. David Cornell

It Pays to Know Your Petroleum
(Part 1) .....March 165
(Part 2) .....April 208
Norman J. Clark

Stop That Thief!.....May 234
F. R. Cozzens

Safety

How You Can Combat Hydrogen Sulfide Hazards.....Nov. 190
George Austin

Field Testing Can Prevent Flange Leaks.....May 201
Marvin R. Jones and Frank N. Baldwin, Jr.

Salt Water Disposal

[illegible],000 Barrels of Brine Disposed Daily in Six Wells at Loudon .....Jan. 164
J. F. Armstrong

Secondary Recovery—See Water Flooding and Gas Injection

Separation, Oil, Gas, Water

How Condensate Recovery Increased.....Aug. 1 176
Harold O. Ebeling

Tank Batteries

New Automatic Tank Battery.....April 195
W. A. Middleton and E. B. Laguki

Testing, Formation

How to Design a Radical Flow Settling Basin.....March 182
H. H. Elliston

Subsurface Pressures Tell Story.....Feb. 1 155
C. C. Olson

Treating

New Wash Tank Design.....Sept. 203
Arthur R. Williams

New Wash Tank Design.....Oct. 278
Arthur R. Williams

Take A Look at Treating Oil Emulsions.....Nov. 178
Walter E. Huffman

Unitization

Unitization . . . And How it Works.....July 198
C. H. Keplinger and J. M. Wanenmacher

Water Flooding

Inverted-Type Packer Solves Salt Water Injection Problem.Jan. 186
George S. Flanders

Nowata Water Floods Use Modern Techniques.....Feb. 1 178
Anthony Gibbon

Boron Compounds Used as Water-Flood Tracers.....April 214
P. G. Carpenter, T. D. Morgan and E. D. Parsons

Water-Flooding Like Wildcatting (Editorial).....May 75
Warren L. Baker

Healdton Has Big Waterflood Potential.....July 190
C. H. Riggs and John E. Way

How to Test Quality of Injection Water.....Aug. 1 189
William F. Cerini

How to Estimate Water Requirements.....Sept. 214
R. C. Earlougher and W. A. Neath

Water-Flood Restores Youth to Old West Texas Lease.....Oct. 251
J. E. Kastrop

Unique Filter System . . . Featured in Pilot Flood.....Oct. 272
R. O. (Jack) Major

Gravity Injection Pays Dividends at Redwater.....Dec. 173
E. Hochhausen and I. M. Rice

Wire Line

Wire Line Methods Cut Workover Costs.....Aug. 1 165
J. E. Kastrop

Workovers

Workovers Revive California Field.....March 174
R. B. Teissier

Mud-Stuck Tubing Recovered by String-Shot Backoff Method .....April 200
Floyd Scott, Jr.

Use of Existing Tubing Cuts Workover Costs.....June 186
E. O. Stewart and Henry Priesmeyer

PRODUCTION HINTS

Truck Bumper Has Many Uses.....Jan. 193
Scrubber Float Stops Engine.....Jan. 193
Swing Line Simplifies Tank Hookup.....Jan. 193
Pulley Hold-Down Reinforced.....Jan. 194
Salvaged Tank is Lease Gun Barrel.....Jan. 194
Air Scoop Cools Truck Drivers.....Jan. 195
Disposal Pump is Auto Controlled.....Jan. 196
Rig Unit Frame Invaluable Aid.....Jan. 197
Disposal Line is Protected by Casing.....Jan. 197
Extension Wrench Operates Plug Valve.....Jan. 198
Intermitters on Line Control Flow.....Jan. 200
Umbrella Arm is Easy to Adjust.....Feb. 1 188
Gas Substituted for Paint Gun Air.....Feb. 1 188
Inhibitor Stops Annulus Damage.....Feb. 1 188
Enclosure Forms Air Duct to Cool Engine.....Feb. 1 190
Regulators Control Disposal of Brine.....Feb. 1 192
Elevated Rack Makes Lube Handling Easy.....Feb. 1 192
Temporary Fuel Station is Portable.....Feb. 1 193
Well Enclosure is Easy to Move.....Feb. 1 194
Well Operations are Recorded on Work Card.....Feb. 1 195
Lines are Hooked Up for Reverse Flow.....Feb. 1 195
Portable Rig Floor Has Height Adjuster.....Feb. 1 196
Shop-Made Grader Does the Job.....Feb. 1 198
Enclosure Aids in Oil Heating.....Feb. 15 226
Compressor Housing is Removable.....Feb. 15 226
Walkway is Safety Feature of Pit.....Feb. 15 226
Steam Whistle is Lease Signal.....Feb. 15 228
Air Tongs Loosen Control Head Ram.....Feb. 15 228
Elevated Rack Aids Tank Reclamation.....Feb. 15 230
Lift Ball on Pump is Quick Weight Hoist.....Feb. 15 232
Spare Gas Tank Mounted on Truck.....March 194
Hand Brake Placed Near Well Head.....March 194
Grease Fitting Protects Lock.....March 194
Overflow Piping Protects Engine.....March 196
Well Sucker Rods Form Cellar Cover.....March 198
Drain Line and Can Collect Oil Leakage.....March 198
This Flywheel Guard is Easily Detached.....March 199
Check Valve Aids in Collecting Oil.....March 200
Coating is Protection for Christmas Tree.....March 201
Slight Gas Pressure Aids Water Pump.....March 202
Hinged Roof Protects Drawworks.....March 203
Parallel Flow Lines Hookup Proves Flexible.....March 204
Volume Tank Adapted to Sand Trap.....April 232
Tank Ups Gas Lift Efficiency.....April 232
Float Prevents Gas Flow Into Oil Line.....April 236
Vertical Chamber Scrubs Control Gas.....April 238
Device Makes Height of Pipe Adjustable.....April 239
Rope Hanger is Made from Two Auto Wheels.....April 240
Line Gas Powers Chemical Injector.....April 240
Half Drum Collects Leakage from Heater.....April 243
Heater Stack has Adjustable Dampner.....April 244
Separator Made from Salvage Pipe.....April 246
Portable Racks Support Sucker Rods.....May 243
Valve Operated by Rod Handle.....May 243
Heater Pilot Has Fuel Scrubber.....May 243
Wheel Step Aids in Engine Repair.....May 244
Hose Drains Water From Heater-Treater.....May 246
Riser Simplifies Engine Oil Check.....May 248
Radiator Chamber is Easily Filled.....May 249
Pumping Unit Made Portable by Rails.....May 250
Shop-Made Rig Rethreads Bolts.....May 252
Folding Rack Provides Maximum Side Clearance.....June 197
Traps Placed in Gathering Lines Aid Cleaning.....June 197
Salt Water Line is Vented to Air.....June 199
Motor is Protected by Shelter on Rails.....June 200
Steel Pipe Ladder Aids in Servicing.....June 202
Combination Fence Guards Pumping Well.....June 204
Step-Platform Aids on Radiator Check.....June 208
Anchor System Aids Pump Installation.....June 210
Making Vertical Flow Line Manifold.....July 206
Skidding Mud Tank with Sand Line Unit.....July 206
Draining Filter Tank.....July 206
Removing Welding Fumes by Exhauster.....July 208
Racking Sucker Rod Stands.....July 214
Rigging Extension Exhaust.....July 218
Installing Flexible Flow Line Manifold.....Aug. 1 201
Lubricating Polish Rod Stuffing Box.....Aug. 1 202
Anchoring Gas Line.....Aug. 1 204
Stopping Metal Door.....Aug. 1 206
Protecting Separator .....Aug. 1 206
Hauling Tools in Rack on Truck Fender.....Aug. 1 208
Elevating Hydraulic Power Oil Unit.....Sept. 234
Keeping Cattle Away.....Sept. 234
Preventing Choke From Freezing.....Sept. 237
Treating with Thermosyphon Heater.....Sept. 237
Back-Flowing Gas Well.....Sept. 238
Cleaning Lease Fuel Gas.....Sept. 240
Protecting Christmas Trees.....Sept. 242
Cleaning Hand Tools.....Sept. 242
Controlling Cooling Tower Air Inlet.....Sept. 243
Adding Blow-Off Line.....Sept. 244
Mounting Hydraulic Pumping Unit.....Oct. 287
Skid Mounting Water Tanks.....Oct. 288
Cutting Pipe and Cable-Laying Costs.....Oct. 290
Starting Heavy-Duty Engines.....Oct. 302
Controlling Production at Battery.....Nov. 206
Moving Pumping Unit Base.....Nov. 206
Guarding Well Head.....Nov. 206
Collecting Crude Samples.....Nov. 210
Aiding Pump Efficiency.....Nov. 212
Heating Gas .....Nov. 214
Guarding Pumps .....Nov. 216
Lubricating Polish Rod.....Nov. 218
Handling Heavy Gear.....Nov. 220
Driving Water Well Pump.....Nov. 220
Reducing H_2S Gas Hazard in Tanks.....Dec. 206
Protecting Motor .....Dec. 206
Dispersing Chlorine Gas.....Dec. 209
Topping Tanks .....Dec. 209
Lubricating Inhibitor .....Dec. 210
Sampling Crude .....Dec. 212
Supporting Meter .....Dec. 214
Separating Gas .....Dec. 216
Servicing Heat .....Dec. 219
Supplementing Gas .....Dec. 219